Idiosyncratic Concepts in the Music of Henry Threadgill's Zooid

An Applied Investigation into Compositional and Improvisational Techniques

Gareth Keany Hill
BMus (Hons), MPhil (Music) Australian National University

Submitted in partial fulfilment of the degree of Doctor of Philosophy.

University of Tasmania

Hobart (July 2017)

DECLARATION

This exegesis contains the results of research carried out at the University of Tasmania, Conservatorium of Music between 2014 and 2017. It contains no material that, to my knowledge, has been accepted for a degree or diploma by the University or any other institution, except by way of background information that is duly acknowledged in the exegesis. I declare that this exegesis is my own work and contains no material previously published or written by another person except where clear acknowledgement or reference has been made in the text. This exegesis may be made available for loan and limited copying in accordance with the Copyright Act 1968.

The research associated with this exegesis abides by the international and Australian codes of human and animal experimentation, the guidelines by the Australian Government's Office of the Gene Technology Regulator and the rulings of the Safety, Ethics and Institutional Biosafety Committees of the University. Ethics committee approval has been obtained for this research: H0015038

Gareth Keany Hill
23 November 2017

Acknowledgements

I would like to take this opportunity to thank the many people that have helped with this project.

For their patience and unwavering support, I thank my supervisors Dr Glen Hodges and Dr Nick Haywood. This study has benefitted enormously from their guidance and understanding.

I also thank the musicians who kindly agreed to participate in interviews, providing invaluable information for this research. Brandon Ross, Jose Davila, Christopher Hoffman and Liberty Ellman all gave thoughtful and illuminating accounts of their experiences performing with Threadgill. Additionally, Ellman was responsible for the excellent mastering of the Slow Code album included here.

The musicians of Slow Code, Jack Beeche, Dan Mamrot and Aaron McCoullough, all gave considerable time and effort to this project. I am forever grateful for their creativity, musicianship and friendship. Additionally, I thank Niko Schäuble for the use of his studio, Pughouse Studios, and his meticulous work engineering and mixing the Slow Code album.

Lastly, I would like to thank my partner Dominique Chaseling. She has provided constant support, great insight and love. Without her continued encouragement, this project would not have succeeded or even existed.

Table of Contents

List of Figures

Abstract

The purpose of this research is to investigate the music of Henry Threadgill's Zooid, focusing on compositional and improvisational techniques, and how these function in an ensemble setting. Discoveries from this research will be used to advance the author's creative practice; a folio of original compositions and performance recordings exploring Threadgill's ideas will be included in this project.

Henry Threadgill has stated in recent interviews that he has developed an interval-based harmonic system and a modular approach to form in his current ensemble, Zooid. These innovations result in a dynamic and original sound, absent of traditional harmonic movement and obvious structure. The processes behind this music have not been extensively explored; little research has been performed on this original musical system, while Threadgill's interviews have provided little clarification of his approach. This research seeks to illuminate this highly acclaimed composer's ground-breaking music. Amongst other awards, Threadgill's recent Zooid album *In For A Penny In For A Pound* received the 2016 Pulitzer Prize for composition.

This project will be achieved through a number of activities including: interviews with musicians in Zooid and those connected with Threadgill, transcription and analysis of a number of Zooid's recorded pieces, and the creation and performance of new works inspired by Threadgill's approach for Zooid. For the author, Threadgill's music is inspiring and intriguing. This research will lead into new areas and provide a contrasting creative approach to that of the author's. It is hoped that this project may also inspire others to explore Threadgill's approach to music.

Introduction

Henry Threadgill's Zooid takes the stage. Drummer Elliot Kavee, then Threadgill carrying multiple flutes and alto saxophone, are quickly followed by guitarist Liberty Ellman, Jose Davila on tuba and Christopher Hoffman on cello. Once settled, Threadgill turns and, facing away from the audience, quietly counts off the first song. The music arrives all at once, tuba, cello and guitar working around each other, the drums providing a driving and pulsating counterpoint. It is not clear where we are, is this a solo? A melody? After some time remnants of structure appear: a low cello note is followed by a common rhythmic gesture. Then the flute enters. This is Zooid. (Author's reflection on Zooid in performance)

Henry Threadgill has been described as "one of the most intriguing composers of our time" (Adler 2011, 24), "one of the great original, iconoclastic voices in American music" (Fischlin 2011), and "one of the most thrillingly elusive composers in and around the jazz idiom" (Chinen 2009). After a career spanning more than forty years and numerous ensembles, Threadgill has formed the ensemble Zooid. Threadgill's music composed for this ensemble is at once confronting and beguiling. Little of this music is immediately apparent; Zooid's approach to melody, solos and overall form are so unusual that on first listening these elements are not evident. Howard Mandel describes it as "richly textured group interplay, organized pieces rife with virtuosity and passion—but few familiar touchstones such as obvious melody, chord progressions or head-solo-solo-solo-head structures." (2010, 46) Yet behind this,

there is a sense of intensity and coherence within the group; the musicians pivot quickly to new material and are capable of creating sudden and unexpected endings. The ensemble name could reference the close rapport between the musicians of the group, with the Oxford Dictionary listing "Zooid" as a biological term defined as "individuals which make up a colonial organism and typically have different forms and functions." The mysterious nature of Zooid's music has prompted this research project.

Zooid currently consists of Threadgill on flute, bass flute and alto saxophone, guitarist Liberty Ellman, cellist Christopher Hoffman, Jose Davila on trombone and tuba, and drummer Elliot Kavee. However, the recordings discussed in this study feature a previous iteration of the ensemble, with bass guitarist Stomu Takeishi replacing Hoffman.

Zooid's music contrasts the author's musical experience prior to this research project. Having performed in numerous ensembles including improvisation relating to the jazz idiom such as Blow, the Ted Vining Trio and Tim Willis's The End, the author's musical practice either involved the use of chord/scale structures reminiscent of much jazz music or a free improvisational approach without a predefined structure. Early impressions of Zooid suggested the use of a different organisational system, distinct from the improvisational methods the author had experienced previously. This music did not appear to contain triadic chordal structures within a discernable repeated form, as is the case for much of the improvised music the author was involved in, nor did it seem as if the ensemble was improvising freely without predetermined structure. A complex musical approach was evident in Zooid, presenting the opportunity to

advance the author's creative practice into new areas.

This project aims to determine what compositional process and techniques can be identified in Threadgill's music for Zooid and how can these be applied to the author's creative practice.

A process of transcription and analysis will be used to identify musical concepts in use in Zooid. These will be further explored in the creation of new compositions and a series of live and studio performances. Performances will be undertaken with Slow Code, an ensemble formed in 2013 with the purpose of developing new improvised music. This ensemble will be the vehicle to develop and explore concepts and techniques discovered in research with the aim of creating a body of work informed by the practice of Zooid. Slow Code consists of Melbourne-based musicians Jack Beeche, Dan Mamrot, Aaron McCoullough and the author, Gareth Hill.[1]

A selection of recordings from Zooid's commercial output will be analysed, determining the inner workings of the ensemble and revealing idiomatic compositional and improvisational concepts that can be used to inform the researcher's musical practice. Aspects including harmonic concepts, melodic devices, arranging, instrumentation, as well as contexts for improvisation will provide impetus for the generation of original compositions. While a potent and vital element of this music, the role of the drums as well as the overall rhythmic approach of the ensemble has not been included in this project. Rhythmic concepts present in this music are worthy of further research but were deemed to be beyond the scope of this study. This

[1] Further information about the Slow Code practitioners is included in Chapter 2.

project represents an original and significant contribution to knowledge as the first performance-based study of Henry Threadgill's music for Zooid, a composer currently with severely limited analytical research in the literature.[2]

As this project is performance-based, its primary objective is to inform and develop the author's musical practice through research. While this will be actively pursued through methods discussed later, this process cannot be entirely formalised; prolonged exposure to any specific music will undoubtedly affect one's practice, if only subconsciously. While the assimilation sought in this research is by choice, Threadgill describes his own period of prolonged exposure, in this case to country music.

> I discovered something when I was really young. I had to give myself a whuppin.' I didn't like country and western music, but I found myself in the army stationed in Kansas where there was nothin' but country music … Every station on the radio, day and night, every bar, every jukebox … I can dislike something, but I've got to give it a chance. I can't close the door completely. Otherwise I shut out something that may be valuable for my own music … Because I had been limiting myself, look what I was missing. I had to kill my limitations. (Ouellette 1998)

As previously stated, the author did not immediately understand or fully appreciate the music that Zooid performs. Put bluntly, this music was difficult listening. At the same time, there was a strong attraction; the ensemble had an intense rhythmic drive and the music's mysterious nature was uniquely fascinating. After multiple listenings, small and tantalising aspects of organisation were revealed in the form of repeated figures or intriguing melodies. While there will be a formal evaluation of the

[2] As discussed in Chapter 1.

influence this music has had on the author's creative practice, the informal understanding through familiarity should also be acknowledged.

In parallel to informal influences, formal impacts to the researcher's creative practice will be evaluated through the creation and performance of a portfolio of new compositions informed by the idiomatic concepts identified in research. The performance and rehearsal of these works will be essential, allowing the assimilation of concepts into performance practice and the opportunity for alternative insights.

The experience the author has had learning to listen to this music may be one of the reasons Threadgill has not enjoyed wider notoriety. Despite his significant and varied body of work, Threadgill has not received the same kind of mainstream recognition that some of his contemporaries enjoy. Iverson suggests this may have been because of his constant pursuit of musical innovation,

> Threadgill could have won more hearts in the general jazz populace if he had continuously performed his most charismatic tunes. Of course, this is the last thing that Threadgill wanted to do. 'I figured out a long time ago that going back for me is always a mistake.' (Iverson 2011a)

Due to Threadgill's relatively low profile, background information will be included here as a means of contextualising this project. The following is a brief biography of Henry Threadgill.

Henry Threadgill Biography

Henry Threadgill was born on 15 February 1944 in Bronzeville, a suburb of Chicago (Lewis 2009). From a young age, he was exposed to the variety of music the city attracted at the time. Early musical experiences came from the radio; Chicago radio broadcasts were wide-ranging, including blues, jazz, classical and country, as well as music catering to the large Polish and Serbian communities living there (Appelbaum 2013). His father ran gambling houses, which Threadgill would visit as a child. To occupy his time, a young Threadgill was given money for the jukebox, "It would be all jazz on the jukebox, because my father loved jazz" (Lewis 2009, 73). This musical exposure continued when Threadgill spent weekends at his father's house where they would "just play records. Duke, Gene Ammons, Count Basie, Modern Jazz Quartet" (Lewis 2009, 73). His parents had divorced when he was three years old and Threadgill spent most of his time living with his mother and extended family. The family would visit the Maxwell Street Markets on weekends, where he had the opportunity to hear the many blues musicians that played in the open air markets, including Muddy Waters and Howlin' Wolf (Lewis 2009, Mazor 2008).

The varied music of post-war Chicago prompted an inspired Threadgill to begin his musical studies at four years of age, learning boogie-woogie piano from the radio. "I would practice Meade Lux Lewis and Albert Ammons. I kept that on the radio. I could figure out harmony because I could play the piano" (Lewis 2009, 73). Later, while attending Englewood High School, Threadgill began learning tenor saxophone and clarinet, supplementing his formal education with time spent attending music venues of Chicago's 63rd street district.

> I used to live at McKie's. I saw everybody. All you would do is take your horn. They would say, just sit over there, young blood, and don't even think about no drink … just sit over there and get you a Coca-Cola or something. (Lewis 2009, 73)

While Threadgill participated in jam sessions on 63rd street, he was also working in blues, polka and mariachi bands, as well as performing for sanctified church services. Liberty Ellman states that the musical climate of Chicago influenced Threadgill's creative approach, in particular his rhythmic sensibility.

> And so with Henry … he was in marching bands, he came up in Chicago where there was a lot of blues. Chicago was like the main spot where a lot of bands would come. You know, not just New York but then they would go there. So he got to see everybody, John Coltrane and Miles and all the people. A lot of church music. So it was all those things, you know. And so his super funky thing comes from the marching band experience and parade music … and that I think informs his rhythm so much. (interview 11 July 2015)

After high school, Threadgill attended Woodrow Wilson Junior College, whose students at the time included Joseph Jarman, Roscoe Mitchell and Anthony Braxton, musicians that would go on to be important parts of the Chicago music scene and receive international success (Lewis 2009). Richard Wang, who lectured in music at the college, introduced Threadgill and his other students to contemporary 20th century classical composers, such as Paul Hindemith and Arnold Schoenberg, and encouraged them to explore the musical possibilities of both classical composition and the concepts of Ornette Colman, Cecil Taylor and John Coltrane (Mandel 2016a). It was at this time Threadgill would meet the pianist Muhal Richard Abrams, "Muhal came

and played at our school, we had a music club at college … and we invited him with a group to come in" (Appelbaum 2013). Threadgill's fellow students, Jarman and Mitchell were involved in Abrams' Experimental Band, an ensemble focussed on exploring new compositional ideas, and invited Threadgill to participate in rehearsals. However, in 1965 Threadgill quit both the Experimental Band and his studies at Wilson to focus on playing primarily for church services. It was at one of these services Threadgill describes being encouraged to take up the alto saxophone.

> There was this church that I was playing at. Morris was the minister … I think he asked me to play His Eye Is On The Sparrow, something like that … So I played it and it just fell flat. There was like, the people were like "mmm." It was very polite, the response, and the minister told me "Henry, you know, under the pulpit I've had this saxophone and I don't know what it is, but I don't think it's as big as the one you've got … why don't you get it fixed up, and I'll pay for it." So I took it and got it overhauled … I came back with it and he asked me, "You know, I want you to play that piece again." When I went up and played it … there was a big difference in the response that was going on in the church. So, I remember I had this realisation right then: that the tenor is a blues horn, and … the alto is a church horn. (Appelbaum 2013)

Threadgill would continue to play church music, and the alto saxophone, later touring with the evangelist Church of God minister, Horace Shepherd. Threadgill recalls his time with Shepherd, "I was playing in camp meetings, speaking in tongues, pulling snakes out of people's mouths" (Lewis 2009, 75) and "we used to go through big revival places where, a lot of times, there would be these almost kind of a competition between this minister and this minister. We'd roll into places and invariably you'd take over" (Appelbaum 2013). This engagement would end when Threadgill decided to join the army band in 1966 as an arranger (Lewis 2009). Threadgill's decision to

enlist was primarily to avoid seeing combat; unfortunately this would not be the case.

After a period of working for the army band, Threadgill was asked to produce an arrangement of patriotic American songs.

> The conductor of the orchestra…they were going away and they had given me a commission to write a medley of these American [songs], Oh Beautiful … Rock Of Ages … and, I wrote it and it was very, I guess it must have come across like Stravinsky or something. (Appelbaum 2013)

The medley was performed at an inauguration in Kansas City, attended by the cardinal, the governor, the mayor and the head of the fifth army. At some point during the performance, the cardinal vocally objected to the performance.

> "Blasphemy!" That's what he said ... [then] the governor looked at the mayor, and the mayor looked back at him, and then he looked over … at the generals … and looked down at the conductor because the cardinal, he had made it clear that he was like, this is blasphemy, what's going on right here … Then they pointed to me, I was on the sidelines, I wasn't even in the orchestra playing … [the] first sergeant said "Threadgill did it." (Appelbaum 2013)

As a result of this performance, Threadgill was sent to Vietnam to serve in the infantry. He would be stationed in the highlands of Vietnam, in Pleiku, until 1969 when he returned to the U.S. (Lewis 2009). Meanwhile, Muhal Richard Abrams and other musicians from the Experimental Band, including Joseph Jarman and Roscoe Mitchell, formed an association to further African-American musicians creating innovative, original music in Chicago, the Association for the Advancement of Creative Musicians or the AACM. The association that exists to this day provided a

space to workshop new music composed by its members, held concerts for member ensembles and set up a music education program. It was also responsible for Threadgill's early discharge; Abrams sent documents explaining that Threadgill had a teaching position with the AACM, allowing Threadgill to move back to Chicago and begin teaching and performing with the association (Lewis 2009).

The atmosphere around the AACM was fertile for the creation of challenging and progressive music. The association was governed according to the will of its members and creative autonomy was valued above all. George Lewis explains,

> The AACM provides a successful example of collective working-class self-help and self-determination; encouragement of difference in viewpoint, aesthetics, ideology, spirituality, and methodologies; and the promulgation of new cooperative, rather than competitive, relationships between artists. (Lewis 2009, x-xi)

For Threadgill, the AACM appears to have opened up the possibilities of incorporating multiple musical influences.

> The players [of the AACM] were all composers, and they were all looking for and developing their writing skills and compositional language. So you would find out what other people were constantly doing, which enhanced what you were doing … Somebody could tell you about listening to this person play music from some other country, or avail you of information to go hear concerts by the Chicago Symphony or the Chicago Chamber Players or anything of that nature … In that circle there was a broad resource of information being exchanged and previewed. It was not exclusively Jazz any more. It was music. (Panken 1996)

It was while back in Chicago performing with Abrams and others from the AACM, Threadgill began to gain a profile as a musician, initially with a collectively led trio called Air. The trio, founded in the early 1970s with bassist Fred Hopkins and drummer Steve McCall, was initially formed to provide music for a theatre production, specifically using Scott Joplin rags (Baumgartner , Shteamer 2010a). The challenges involved in transferring Joplin's densely harmonic piano music to a trio of saxophone, bass and drums, proved to be a fruitful opportunity with Air going on to record an album, Air Lore, of similarly adapted material. Hopkins reflects on the inception of the trio.

> Henry got commissioned to write the music and perform for this play, The Hotel: 99 Rooms, with Don Saunders, the director. In fact, not that long ago we performed one of his pieces at the Public Theatre. So we got together and we performed this music. And what happened was this special thing … After we performed for about … God, I forgot how long we worked at that time - but several months. And after the play was over, we said, "Wow, we can't just drop this now," because we had gotten so close musically - and as friends also. So we decided to get together and form a band. (Panken 2011)

The limited instrumentation of Air would cause Threadgill to develop different ways for the ensemble to function, including the drums. "I studied what Ahmad Jamal was doing with drums … how the drums were tuned, how the drums wouldn't just keep time, they would play melody" (Sandow). Additionally, the trio found new ways to incorporate composition and improvisation, and also bring an orchestral approach to the group, highlighting the elements of wind, strings and percussion (Davis 1990).

A later ensemble, the Henry Threadgill Sextett (or Sextet), formed after his move to

New York in 1975, would expand this idea (AACM New York Chapter 2016). The Sextett incorporated winds, Olu Dara (later Rasul Siddik, then Ted Daniel) on trumpet, Craig Harris (later Ray Anderson, then Frank Lacy, then Bill Lowe) on trombone and Threadgill on saxophones, clarinet and bass flute; strings, Deirdre Murray on cello (originally Brian Smith on piccolo bass) and Fred Hopkins on bass; and percussion, John Betsch (later Reggie Nicholson) and Pheeroan akLaff (later Newman Baker). The spelling of Sextett with two t's was in reference to the sections of the ensemble, as he saw the percussionists as playing one part. Threadgill explains,

> I was really trying to straighten people our because they kept making this thing about "sextet" and "septet," so I thought, "Let me make a distinction." So when you see Sextett, [mock-serious] "He means a kind of special sextet, because he's not using traditional spelling." (Shteamer 2010a)

The Sextett received wide critical acclaim during the late 1980s, with Threadgill winning the award for best composer in the Down Beat polls of 1988, 89 and 90 (AACM New York Chapter 2016). The varied instrumentation of the group allowed Threadgill to create rich sonic landscapes, evoking sombre moods with striking harmonies as well as energetic dance feels.

> One thing I've been working toward is a larger orchestral sound that gets away from the traditional big-band sound. I had a very large palette in the Sextett. Just with the drums alone, I had twelve pitches; two floor toms, upper toms, snare drum, floor bass drum and concert bass drum. I had two percussionists, that's six tones apiece. (Mandel 1999, 71)

Threadgill would continue to search for new sounds in his music with the ensemble, Very, Very Circus. Originally consisting of Threadgill on alto saxophone and flutes,

Curtis Fowlkes on trombone (later Mark Taylor on french horn), Brandon Ross and Masujaa on guitars, Edwin Rodriguez and Marcus Rojas on tubas, and Gene Lake on drums, the oddly constructed group would combine influences of “avant-garde jazz, funk, salsa, and East European marches” (Baumgartner), while continuing his explorations into double instrumentation, this time with guitar and tuba.

> With "Very, Very Circus" I'm looking for a whole different type of texture, something similar to what Miles Davis was doing when he "went electric" and recorded "Bitches Brew", or what Ornette did when he formed the group "Prime Time". But I've also combined the tuba, one of the earliest instruments in jazz and the forerunner of the bass, with the electric guitar, a comparatively recent instrument. So in "Very, Very Circus" I've got a new ensemble that can look both forward and backward and pay its respects to various traditions while building upon them. This is what I hope my music has always done and will always continue to do. (AACM New York Chapter 2016)

In addition to these groups, he has led numerous other unusually populated ensembles such as X-75 featuring four woodwinds, four double basses and one vocalist; the Situation Society Dance Band, a 19-piece ensemble including vocals, a string section, saxophones, brass and rhythm section; and Make A Move, featuring accordion, harmonium, vibraphone and marimba at times (Baumgartner , Pareles 1986).

Currently residing in New York, Threadgill continues to extend his musical practice leading both the previously mentioned Zooid and a larger ensemble, Double Up, featuring double pianos in its line up. As a continuous musical experimenter and pioneer, this quote succinctly illustrates his approach beyond the bounds of genre or classification.

> The one thing I've always understood was the aim. The aim is to make music. How? That question is open. With what? And that question has always been open … The only thing that I knew from the time I was a little kid was that the idea was that you had to make music. And I don't care what the music was or where it was from. It didn't matter if it was Mozart or Balinese orchestra or whatever it was. The idea is to make music. And how you do it, nobody really cares, basically. I don't think the listeners care. It becomes a conversation for academics and things like that. (Hall 2011)

Chapter 1 – Literature Survey

As with other lesser-known artists, it is unsurprising that the literature around Threadgill's music is limited. While there certainly is material concerning his life and career, little formal investigation has been carried out regarding Threadgill's concepts and approach to music. Threadgill discusses his musical concepts and approach in multiple interviews but no attempts are made to explore any underlying processes. While these interviews are revealing and provide insight into Threadgill as an artist and person as well as invaluable self-descriptions of his musical process, analysis that could illuminate his music does not occur. The primary aim of this research project is to further the author's musical practice through investigation of Threadgill's music. The consequent secondary outcome is to address the lack of formal analysis and provide some insight into the workings of an innovative musician.

Prior to Zooid, Threadgill has created a substantial body of work consisting of highly original music. From the leaderless trio of Air featuring free improvisation and rearrangements of Scott Joplin rags, to the New Orleans inspired polyphony of the Situation Society Dance Band and the quasi-fusion sound of Make A Move, he has consistently drawn influence from multiple musical traditions, employed challenging instrumentation defying traditional jazz band configuration and effectively melded the competing elements of composition and improvisation. This can be seen in this description of another ensemble, the Henry Threadgill Sextett.

> The use of low instruments, such as tuba and French horn, allows Threadgill

> to cloak his melodies in a trancelike, euphoric, mysterious layer of sound. Threadgill is an expert in the imperceptible blending of composition and improvisation. This allows him to seamlessly unite the legacy of free jazz with New Orleans dirges and funeral marches, with Ellington and Mingus … His oblique, well-conceived juxtapositions of different musical styles are not nostalgic meditations on jazz history, but rather raw attacks on clichés—a powerful, sophisticated, forward-thinking celebration of the past. (Berendt and Huesmann 2009)

This highly complementary tone is often repeated in the literature concerning Threadgill; he is regularly referred to as an advanced and talented performer, composer and ensemble leader, a sentiment frequently echoed by musicians the author discussed this project with. Given this level of respect in the jazz community it is incongruous Threadgill remains an understudied figure in academic literature. While the scope of this research project is confined to the recent music of Zooid to allow thorough investigation, it is hoped that this study may generate further investigation of Threadgill's previous work. An examination of the progression of his musical output seems fertile ground for further research.

The first three sections of this literature review detail material related to the broader aspects of this project. The first section, General Music Analysis, discusses sources outside of the jazz tradition. The second section concerns Jazz Improvisation, including jazz analysis and the processes of jazz performance. The third section is titled Musical Practice Research, including studies that have sought to assess compositional and performance practices through formal investigation.

The remaining sections focus on works pertaining specifically to Threadgill. As

previously noted, Threadgill is not a mainstream figure and the amount of literature written about him is correspondingly limited. Of this, the majority cover his life and music without further analysis of musical process with a small number of interviews provide excellent explanations from Threadgill and guitarist Liberty Ellman regarding the musical functioning in Zooid. These works will be divided into the following sections: Biography, Interviews/Articles and Musical Discourse. The very limited amount of material directly concerning Threadgill's concepts and approach will appear under Scores and Music Analysis.

General Music Analysis

While Threadgill's work could be considered part of the jazz tradition (and his work has been categorised as such), it appears he is uneasy with the term "jazz." Threadgill explains, "I never did consider my music jazz…jazz is part of my vocabulary, but I don't do jazz specifically" (Birnbaum 1995, 17). Currently, Threadgill does not describe his music as "jazz," preferring instead to use the term "creative improvised music" (Shteamer 2010b). For him, the term has been subverted; diffuse from the intent of the creatively forward music he produces.

> There's confusion about what *jazz* means now … There's a basketball team named Jazz, perfume named jazz, festival named jazz—there's not one person on there that's improvising … and then people make films, documentaries, Ken Burns for one. He and the people that were his consultants, they give a picture of what they say jazz is and then exclude generations of people, whole schools and generations of people are excluded from it … So that's why I say that word has really lost its meaning. (Shteamer 2010b)

In addition to this, Threadgill has actively sought out music from a wide range of genres. Growing up in Chicago, "I was listening to as much Serbian music and country and western music and classical music as I was listening to jazz and blues" (Chinen 2009). In particular, Threadgill appears to have been strongly influenced by classical music. In Lewis's *A Power Stronger than Itself*, Threadgill mentions meeting with two of the foremost atonal classical composers as a young man.

> I met Hindemith and Varese in person. With Hindemith I had just kind of validated something that I had already learned, but the Varese was something I couldn't touch. I didn't know what the hell was going on, and I didn't know

> why I liked it. I positioned myself and grabbed his hand and told him how many pieces of his that I liked. He just looked at me for a long time, very earnestly. You gotta remember that I knew that he was the one that taught William Grant Still, so I knew that he was okay. (Lewis 2009, 75)

Moreover, Threadgill was exposed to classical composition techniques through the AACM (Lewis 2009) and at various classical music institutions.

> I went to all the music schools—universities, colleges, conservatories—all around this country … I was constantly studying at these places, taking every course in music they had to offer. That was my approach; I was never interested in a degree, I was interested in the *catalogue.* (Mandel 1999, 68)

It is therefore probable that Threadgill has been influenced by atonal and other classical composition approaches. Two sources provide analysis of atonal techniques pertinent to the approach taken in this study. Vincent Persichetti's *Twentieth-Century Harmony* (1978), primarily written as a handbook for student composers, provides examples of atonal compositional devices, while Allen Forte's *The Structure of Atonal Music* (1973), gives a more rigorous examination. Concerned with atonal music analysis, Forte offers a systematic analytical system quantifying pitches and intervallic relationships; a system largely derived from the work of composer Milton Babbitt. Of particular interest to this study are Persichetti's concept of mirror writing and Forte's interval vector analysis. Both concepts focus on the compositional implications of intervals; mirror writing involves reversing intervals to produce new musical material, while interval vectors gauge the discrete intervals contained within a group of pitches. In multiple interviews (Mandel 2010, Adler 2011, Chinen 2011), Threadgill mentions the significance of intervals in his concept for Zooid.

> Well, the language … is such that we move from one series of intervals to another series of intervals throughout a piece of music … They control the voice leading and everything: The harmony, the voice leading, the melodic line, everything is moving not necessarily with every one of those intervals being used, but that pool of intervals, and improvisation is coming from there also. (Shteamer 2010b)

Determining any direct influences in a compositional approach is difficult, but Persichetti and Forte's concepts may be useful in the analysis of Threadgill's music. The implications of these concepts will be discussed further in Chapter 2.

As previously mentioned, Threadgill has expressed a connection to the music of Edgard Varese. While this project does not seek to provide analysis of the musical and extra-musical influences included in Threadgill's works, it is worth mentioning the parallels between Varese and Threadgill. An article published by Varese and his pupil Chou Wen-chung (1966) details Varese's vision for electronic instruments and the musical possibilities they could allow. He also addresses criticisms of his experimental electronic music as being antithetical to musical tradition.

> My fight for the liberation of sound and for my right to make music with any sound and all sounds has sometimes been construed as a desire to disparage and even to discard the great music of the past … No matter how original, how different a composer may seem, he has only grafted a little bit of himself on the old plant … It does not matter if at first it seems to some people more like a cactus than a rose. (Varese and Wen-chung 1966, 14-15)

In various interviews Threadgill echoes a similar approach to artistic innovation. In

discussing his musical system, he suggests his methods build on rather than destroy previous concepts.

> There is a system and there is no system, it's a natural language … The regular language is still there. I haven't done anything to get rid of anything-I don't believe in that. Anything that's been very, very good you don't get rid of it. You'd have to be crazy to get rid of what works. You're supposed to find a way to condense it, re-evaluate it, give it a new look and keep its essence so you can come in with new information. (Mandel 2010, 48)

Similarly, musical form is of great concern for both Varese and Threadgill. They share a similarly organic approach to form. Varese states that any work should dictate its own form, "Form is a result-the result of a process. Each of my works discovers its own form. I could never have fitted them into any of the historical containers" (Varese and Wen-chung 1966, 16). While Threadgill appears to treat form as a shifting variable, using the process of rearrangement in rehearsal to search for new configurations.

> I come to rehearsal with much material that is written out, but that's only a starting point. Everything is written out, but it also doesn't mean a thing. The music is totally modular because what is here can be here or what is here can be there because this is what we discover in discovery. (Iverson 2011b)

More so, Threadgill directly credits Varese for inspiring his current concept with Zooid.

> I saw a process in what [Varese] was doing…He got what he wanted by taking one step, where there were actually four or five steps. I don't know if he knew

> about those steps, I never saw what I'm doing in his music, but everything I'm doing comes from that one thing he was doing, which was all he wanted to do with it. I went, I'll be damned, I've been sitting here five years and it's right in my face. I've been going one-two, when there's one-two-three-four. (Mandel 2010, 48)

The connection between Threadgill and Varese is compelling: a fascinating insight into the influence between two great musicians. Similarly, Threadgill has mentioned numerous other classical composers in reference to his work such as Elliot Carter, Stravinsky and Bartok (Mandel 2010, Shteamer 2010b). While beyond the scope of this project, it is strongly suggested that Threadgill's relationship to classical composition is worthy of additional investigation.

Another musician closely aligned with Threadgill is the composer and performer Anthony Braxton. There are strong parallels between the two; both woodwind players grew up in Chicago, studied at the same school and were heavily involved with the AACM. Additionally, both employ alternative notation and have drawn influence from multiple musical traditions in their music making. While there is a lack of literature concerning analysis of Threadgill's music, the opposite could be said of Braxton. There are several substantial works that document his music making and discuss his musical concepts. A contributing factor to this literary imbalance is the existence of Braxton's own writings concerning his music. Braxton has published multiple volumes under the Tri-Axium Writings and Composition Notes titles. (Braxton 1988, 1985) These writings have led to works by Ronald M. Radano (1993) and Mike Heffley (1996) providing further discussion of Braxton's musical systems and frameworks as well as in depth analysis of his performative output. Another work of note by Graham Lock (1985) includes extensive interviews with Braxton and

documents a British tour of a Braxton-led ensemble. Given the idiosyncrasy of Braxton's sound world, the research presented by Radano and Heffley both seek to understand his music on its own terms, drawing extensively from Braxton's literary output and employing diagrammatic analysis in a style similar to Braxton's graphic notation system. In particular, Heffley has attempted to incorporate a Braxton-inspired structure to his work by devising diagrams that detail the internal logic and relationships between his various chapters.

> Visuals--diagrams, drawings, schemata--and numbers (and alphanumeric and geometric visuals of numbers and their relationships) figure large in both Braxton's music and his explanations of it. My use of both here is offered as a conceptual touchstone through the potentially overwhelming convolutions of them to come. My circles [within Heffley's structure diagram] covey the way I've tried to spiral through my material and tie the end of the book up with its beginning, just as Braxton's latest fruits are the issue of the same kind of seeds they contain. (1996, 17)

These approaches, centred on the understandings of the music practitioner, provide a compelling analysis of this music and reflect a similar ethos to some of the literature discussed in the following subsection. Beyond this aspect, the analytical procedures contained in these works do not have a bearing on the methods used in this project. Furthermore, the compelling parallels between Braxton and Threadgill's music are not within this project's scope and are suggested as a line of enquiry for further research.

Jazz Improvisation

In the last twenty years there has been a significant growth in jazz research. A shift in perception and changes in attitude from academia have allowed further recognition of its importance. A number of authors have contributed to this development with works treating jazz as a subject distinct from other music research. Ingrid Monson mentions early efforts in jazz analysis relied heavily on classical music theory, uncovering features common to the two genres while leaving other unique aspects unappreciated or worse, devalued.

> The same standards [of Western composition], however, were also used to disparage aspects of the jazz tradition and allowed scholars to overlook those aspects of improvisation for which there are no analogs. (1996, 4)

A number of authors have attempted to address this issue, tailoring analysis to the needs of jazz as an art form to and of itself.

Ekkehard Jost presents an early example of this approach in his study of a selection of prominent free jazz practitioners, *Free Jazz* (1981). Covering the music of a number of free jazz practitioners, Jost argues that these musicians rejected the conventions of mainstream jazz and developed new unique musical systems.

> Their only point of agreement lay in a negation of traditional norms; otherwise, they exhibited such heterogeneous formative principles that any reduction to a common denominator was bound to be an oversimplification. (1981, 9-10)

Consequently, Jost proposes that the variety of musical styles exhibited by these practitioners requires a different approach to analysis. Analysis in *Free Jazz* is tailored to best suit the musical style of each musician, employing a range of different techniques including graphic notation, score excerpts and form analysis. Jost's effort to illuminate the individual innovations of these musicians presents an attempt to value their music on its own terms, an attitude directly relevant to the study of Threadgill's idiosyncratic approach. Drawing from this early study, Lynnette Westendorf provides a continuation of Jost's approach in her dissertation "Analysing Free Jazz" (1994), reiterating the need for a tailored approach to this music. The analytical methods employed by these authors will be further discussed in Chapter 2.

Widely accepted as one of the most comprehensive works on jazz, Paul F. Berliner's *Thinking in Jazz (1994)* is the culmination of extensive interviews with jazz practitioners and transcription of musical examples into a sizeable discussion of the numerous cultural, developmental, practical and conceptual aspects present in jazz music. As a synthesis of ethnomusicology and musical analysis, Berliner's practitioner-centric approach was a departure from previous jazz research. For Berliner, the reputation of institutional scholarship among the jazz community was of outsiders looking in and judgement from afar. In agreement with Monson, he states that jazz in research had often been viewed through the lens of western music theory without a thorough understanding of musical processes unique to style. Consequently, "understanding how the artists themselves viewed the issue … was of central importance" (1994, 5).

Thinking in Jazz would go on to influence other publications, including Ingrid

Monson's *Saying Something* (1996) and David Hodson's *Interaction and Improvisation* (2007). Both authors recognised a similar deficit in previous research, earlier efforts had been concerned with the analysis of soloists only, single lines out of context of the ensemble they were performed in. Monson addresses this through a multidisciplinary approach, combining linguistic theory with ethnomusicological and music analysis approaches similar to Berliner. The title of the work echoes this linguistic approach; *Saying Something* refers to the musical act of transcending musical elements in jazz performance to achieve communication with other band members and the audience. Monson states that within this communicative process, "interacting musical roles are simultaneously interacting human personalities" (1996, 7). Thus, verbal communication traits and interactive patterns are analogous with, and can be applied to interaction within jazz ensembles. The result is a development in describing the complex interactions between jazz musicians, informed by concepts and processes described by the musicians themselves.

Monson's multidisciplinary research uncovers numerous interactive events occurring between soloist and rhythm section in the extensive transcriptions of recorded performances. In response, Hodson's research takes interactive analysis to its next logical conclusion; that interaction occurs between all members of a jazz ensemble, not only between a soloist and members of the rhythm section. Hodson uses transcription and other graphic representations to discuss interactive techniques employed in jazz performance. While these observations are sometimes more subjective than objective, going so far as to suggest possible motivations for particular musical events and speculating on moods created within a performance, his work highlights a number of important musical features of jazz that will be explored for

efficacy in this project.

In attempting to study jazz music with respect to and utilising the perspectives of its practitioners, Berliner, Monson and Hodson all have produced analytical works of great substance and depth. While some aspects may prove to be superfluous to the aims of this practice-based research project (in particular, a linguistic approach), a methodological process that includes musician interviews to inform transcription and analysis methodology is likely to generate appropriate concepts for new creative works. The application of these approaches will be discussed further in Chapter 2.

The use of transcription in the analysis of improvised music is not without its complications. The act requires the researcher to make judgements regarding the representation of ambiguous pitch and rhythm or even whether sounds should be included at all (especially in the case of "ghost notes," sounds played with very little or no pitch). This is further compounded in the process of analysis, where decisions regarding an improviser's intent are sometimes necessary. Contrasting the approach for analysis of pre-composed scores, this issue is discussed by Bruno Nettl and Melinda Russell.

> For compositions, we believe that all components are equally and definitely intended by the [composer] … In improvisation, one must face the likelihood that some of the material maybe precisely intended while other passages are thrown in without specific thought. (1998, 13)

While the suggestion that passages of improvisation are played "without specific thought" devalues the process of improvisation to some extent, the authors rightly

suggest that mistakes are frequently present in jazz improvisation. In the author's performance experience mistakes are a normal part of improvising which may even be exploited creatively to add to a performance. The presence of mistakes in improvisation means analysis must be approached differently to that of a score. Derek Bailey, in his survey of improvisation in music around the world, *Improvisation: Its Nature and Practice in Music* (1993), expresses a similar, if more forward, sentiment.

> The real indictment of transcription is that in most cases it is used to reduce a performance to a condition in which it can be examined as if it were composition. When the object of examination is improvisation, transcription, whatever its accuracy, serves only as a misrepresentation. (Bailey 1993, 15)

Bailey's statement is correct in one respect; transcription can never fully capture the intricacies of a performance. However, the same could be said of a score misrepresenting a classical music performance; without the performer's interpretation, classical music would not be nearly as interesting (or audible). Perhaps a more accurate assessment of transcription would be as a form of limited representation. Of these limitation, Berliner explains, "there may be elements of creativity that are destined to remain mysterious, but it is possible to talk effectively about many aspects of [jazz improvisation] that previously had eluded articulation by scholars" (1994, 8). Transcription is not a perfect tool but it appears to be the most appropriate method for this research project. Consequently, awareness of transcription's limitations must be taken into account in any analysis. Aptly, Hodson describes his use of transcription as "heuristic" (2007, 1), a limited method of exploring the complexities of jazz improvisation more concerned with effective outcomes rather than an infallible process. This is a fitting term, given the shortcomings of the practice.

Noting similar limitations, Travis A. Jackson avoids the use of transcription and challenges the idea that recordings alone can provide sufficient information for research in his study of the New York jazz scene, *Blowin' the Blues Away* (2012). For Jackson, the process of recording involves decisions that alter the ultimate sound of a performance.

> Microphone selection and placement, recording media, room construction, frequency equalization, dynamic range compression, and countless other choices affect what we hear on a recording. A change in any one of them can appreciably alter the final product. Each of these constitutes a human decision, whether a producer's, engineer's, or performer's, oriented toward getting a specific kind of sound, doing something in one way rather than in others. (Jackson 2012, 8-9)

The implication here is that recordings represent a select part of a musician's output, filtered through the electronic and commercial confines of the recording environment. Jackson suggests that a more holistic approach to jazz research may allow a deeper understanding. Jackson's study included a period of attending performances, interviewing musicians and witnessing recording sessions, allowing insight into how musicians themselves perceive their music and process, and exposure to multiple performances of individual artists. Similar to Berliner's numerous musician interviews, the time Jackson spent immersing himself within the New York jazz scene allowed him to develop an insider's perspective of its culture and processes. The knowledge he gained witnessing recordings and performances, and interacting with members of the scene was reflected in analysis.

> My analysis of [recording sessions] is informed not only by the sounds made accessible by recording, but also by the knowledge of the interactive contexts and constraints of recording as well as the long-term interactions of the performers. In other words, my analysis is the result of knowledge not only of sound, but also of a musical event that was recorded and the frames surrounding it. (Jackson 2012, 158)

This long-term immersive research has led Jackson to focus on musical aspects that are not readily notated, forgoing transcription by instead "presenting each performance discussed as a narrative incorporating various performative and contextual parameters, I am privileging the social in musical events, in hopes that that strategy allows me better to preserve their dynamism" (2012, 157).

A comprehensive survey of jazz analysis is provided in Gary Potter's *Analysing Improvised Jazz* (1992). In his discussion of a range of analytical works dating back to the 1950s, Potter provides an assessment of the efficacy of the major approaches, identifying advantages and deficiencies. He proposes an analytical style incorporating other approaches while compensating for perceived inadequacies. Interestingly, Potter suggests that, "As much of the analysis as possible should be displayed in musical notation. Some verbal description is inevitable, but it should be kept to a minimum" (1992, 150). This approach is directly contrary to Jackson's narrative style and reflects the musical aspects valued in the analysis of each author. The plethora of the analytical methods examined by Potter and the previously mentioned authors will be assessed for their applicability in Chapter 2.

Musical Practice Research

As the interest in jazz research has increased, so too has research dealing with musical practice development. As in this project, musical practice research differs from other research by focussing on furthering creative practice within academic research. The literature included here reference creative practice development as a primary aim of research and engage with the ramifications of this to varying degrees.

Produced in the mid 1980s, Michael Montgomery's "Studies in Jazz Style for the Jazz Bassist" (1984), presents an early example of musical practice research. Noting that the "jazz idiom … is often neglected by the classically-oriented performer" (1984, 1), Montgomery proposes producing of a number of etudes each reflecting the approach of a different subgenre or prominent bassist, as a way to familiarise non-jazz bass players to the style. Despite its pedagogical focus and limited engagement with creative practice development, the creation of a number of etudes in a research context sets a precedent for the current project.

A more recent example of creative practice research is Scott Cook's dissertation titled "Referential Sets, Referential Tonics, and the Analysis of Contemporary Jazz" (2012). The impetus for Cook's research arose in his experiences in performance. The difficulties posed by harmonic progressions found in compositions from the post-bop era onwards were not conducive to satisfying improvising. "In essence, I was continuously reorienting myself to new keys or tonal areas … the result was often not musical to my mind, and would, at times, distract from my enjoyment of the performance" (2012, 1). In aid of this, Cook suggests developing a "useful jazz

theory," a performance-focused theory designed to provide a practical understanding of complex harmony to assist improvisation. He has developed a referential set theory for analysing the melody and harmony of modern jazz compositions combining "elements of traditional jazz theory with techniques reminiscent of those used in the analysis of nineteenth-century chromaticism" (2012, 75). This work contains a compelling theoretical model, potentially useful for the improvising musician. However, Cook does not fully explore the process of practical application, only briefly mentioning the effect this study has had on his performing in the conclusion.

Kristin Isaacson's dissertation, "Yardbird Cello: Adapting the Language of Charlie Parker to Cello through Solo Transcription and Analysis" (2007), presents a more performance-centric approach. Examining recorded solos of Charlie Parker, Isaacson explores the process involved in performing Parker's solos on cello. Much of this study focuses on the technical issues involved in replicating Parker's intricate phrases, discussing the way bowing and fingering on the cello can accommodate this challenging material. While one chapter is dedicated to explaining the process of learning and absorbing Parker's style on the cello, Isaacson stops short of providing evidence of how this process has changed her performance practice, either in the form of creative reflection or new works.

Nicholas Haywood approaches creative practice development directly in his doctoral thesis "Complexity Through Interaction: An Investigation into the Spontaneous Development of Collective Musical Ideas from Simple Thematic Materials" (2014). His project concerns the generation of meaningful musical expression through interaction in an improvising ensemble, and the factors that contribute to this.

Research was carried out through a series of performances with a newly formed ensemble over two years. Two recordings were produced, one at both the beginning and end of the research period, forming the material for analysis. An examination of these recordings, through self-reflection and interviews with the ensemble members, gave rise to theories regarding the conditions for successful ensemble improvisation.

Haywood's aim was not to thoroughly investigate the harmonic, melodic or rhythmic aspects, but to evaluate the performances as successful creative works. The perceived quality of performance and connection between players were valuable metrics, providing a qualitative focus to the research. Without resorting to notated transcriptions, Haywood and the other participants' reflections on performances provided appropriate material for analysis. In an approach similar to Jackson, this method gives weight to musical aspects less apparent in a transcribed score through a focus on the viewpoints of the participating musicians. While the current research project does not have a primary focus on ensemble interaction, the analytical techniques displayed by Haywood are convincing and will be investigated further in Chapter 2.

In addition to these approaches, a number of postgraduate theses focus on the analysis of musical style in relation to jazz improvisation. Glen Hodges' "The Analysis of Jazz Improvisational Language and its use in Generating New Composition and Improvisation" (2007), Marc Hannaford's "Elliot Carter's Rhythmic Language: A Framework for Improvisation" (2012), and Stephen Harvey's "Jazz Chamber Music: An Analysis of Chris Potter's Imaginary Cities and a Musical Composition" (2016) all provide excellent examples of analytical research applied to

compositional and performance outputs. In all cases direct links were made between analysis and the generation of composition, satisfying the research based practice aspect of these works. A similar approach will be sought in the current project.

Henry Threadgill

Threadgill's status as a prolific yet underexposed musician is reflected directly in the literature on his life and music. A Grove Music Online entry on Threadgill (Mandel and Kernfeld) is brief and outdated, mentioning his work only up until the mid 1990s. As previously mentioned, this deficiency is considered significant for a prolific and influential musician and composer, a situation this project seeks to address. Of the few works concerning Threadgill most can be considered largely biographical pieces, dealing primarily with his life and career. These works are included under the following headings: Biography, listings in encyclopaedias or as part of larger historically focussed texts; Interviews/Articles, writings that included insight from Threadgill into his music; and Musical Discourse, literature that discusses Threadgill's music from a critical standpoint. Finally the remaining two sections, Scores and Music Analysis, focus respectively on Threadgill's unpublished manuscripts used in this project and the limited number of publications that deal with Threadgill's work from an analytical perspective.

Biography

Unsurprisingly, there are no formally published biographies solely concerning Threadgill. A number of music encyclopaedias and websites have brief entries

detailing his life and career, while biographical information is also included in various other publications. Focussed largely on background and career as a musician, these works rarely discuss Threadgill's music or process, if at all.

Oxford Music Online includes two articles about Threadgill. The previously mentioned entry is not up to date, covering his career up until the 1990s (Mandel and Kernfeld). The other, by Michael Baumgartner, and is more comprehensive, listing his major ensembles up to and including Zooid . Three websites feature larger biographical pieces. The AACM New York Chapter website features an unattributed biography that again ends in the 1990s (AACM New York Chapter 2016), while critic Greg Sandow has included a more free ranging biographical account on his website, originally included in a press kit for Columbia Records (Sandow). Additionally, Threadgill's website contains a revealing biography detailing his life and achievements to date and is presumably approved by Threadgill himself (Santoro).

Mandel provides more relevant material in his discussion of jazz music in the last two decades of the 20th Century, *Future Jazz* (1999). A subchapter, dedicated to Threadgill, is largely made up of quotes describing his childhood growing up in Chicago, his early attraction to music and subsequent music career. These quotes give insight into Threadgill's background and development as a musician, but little more.

Valerie Wilmer's *As Serious as Your Life* (1992) covers the major figures associated with "The New Music," as free jazz was sometimes referred to. While Threadgill is only mentioned in the main body twice (a short biography is also included in the appendix), Wilmer covers the history and members of the AACM and numerous other

prominent experimental musicians of the time, detailing the cultural and musical context of Threadgill's early career.

George E. Lewis gives a significant and comprehensive history of the AACM in *A Power Stronger than Itself* (2009). Concerned with chronicling the AACM from an insider viewpoint, Lewis (a longstanding member of the organisation) conducted extensive interviews with numerous members of the association. The organisation's focus on promoting individual creativity fostered many highly regarded musicians, including Roscoe Mitchell, Lester Bowie and Anthony Braxton, all artists with highly original approaches. Significantly, multiple sections of the text deal with Threadgill's life and music. This comprehensive resource is a valuable addition to literature concerning Threadgill and highlights the crucible of the AACM that he arose in.

Interviews/Articles

In contrast to the lack of coverage in more formal literature, Threadgill has been a relatively popular subject for articles and interviews in journals, magazines and more recently, on blogs and other websites. While these sources do not venture into musical analysis, they often include Threadgill's reflections on his music.

Wayne Enstice and Paul Rubin (1992), and Studs Turkel (2006) have published interviews with Threadgill. Unfortunately, there is little relevant information to be found here, with these interviews containing mostly biographical information replicated elsewhere. These will not be used further in this research.

In contrast, articles and interviews in music-focussed periodicals (such as *Down Beat*, *Jazztimes* and *The Wire*), in other publications and websites contain pertinent self-reflections. Journalists David Adler (2011), Larry Appelbaum (2013), Larry Birnbaum (1995), Nate Chinen (2009, 2011), Seth Colter Walls (2016), Daniel Fischlin (2011), Glen Hall (2011), Ethan Iverson (2011b, c, d), Howard Mandel (2010, 2016b), Frank Oteri (2010), Dan Ouellette (1998), Ted Panken (1996), Gene Santoro (1987) and Hank Shteamer (2010b) have all incited Threadgill to elaborate on his musical practice and philosophy. These sources provide an excellent basis from which to form an initial understanding of his music with Zooid and to inform an appropriate analytical method.

Musical Discourse

The literature included here is mostly confined to commentator or critics' writings on Threadgill's music. Given this context, the level of enquiry is confined to verbal observations about his work, commonly regarding the instrumentation of Threadgill's various ensembles and his range of compositional styles. Stuart Nicholson discusses instrumentation in *Jazz: The 1980s Resurgence* (1995).

> Threadgill's prowess as an orchestrator was revealed on 'X-75 Volume 1' (Arista Novus) from 1979, with a drumless band of four basses and a saxophone choir that impressed with an arrangement of 'Celebration'. By 1982 he had slimmed down and revised this unusual ensemble to what he called his 'sextet' (a septet with two drummers, two basses, saxophone, trumpet and trombone). (1995, 125)

While Todd Jenkins notes musical influences present in Threadgill's compositions, "The leader's persistent interest in martial music takes a powder in favour of Arabic, Indian, Latin, and even classical seasonings" (2004, 357). Similar observations are echoed in other sources including Francis Davis' *Outcats* (1990), Ted Gioia's *The History of Jazz* (1997), and Joachim-Ernst Berendt and Gunther Huesmann's *The Jazz Book* (2009).

Gary Giddins offers a discussion of Threadgill in two compilations of published articles (1998, 2004). One article critiques Threadgill's recordings up to and including the Very Very Circus ensemble, where an intriguing view of the music of the Henry Threadgill Sextett is given.

> These records represent Threadgill's first major attempt to create a music in which soloists never depart for more than a few measures from the ensemble – a music that aspire to collective tumult in which the composer's hand is always apparent. (1998, 518)

Beyond this, there is little else of relevance to this project within these volumes.

The *Penguin Guide to Jazz on CD* (Cook and Morton 2004) offers reviews of four Threadgill recordings from a variety of ensembles including Very Very Circus, Make A Move and Zooid. An apt description appears in the Threadgill's section preamble, "Describing an artist as 'uncategorizable' is both a feeble shorthand and a truism, but in the case of Henry Threadgill it's also an inevitable recourse, because the Chicagoan's dense, chewy music really is sui generis" (Cook and Morton 2004, 1572). It is worth mentioning Cook and Morton's review of the first Zooid album, *Up*

Popped The Two Lips, describing some tracks as "confused stylistically" while awarding it "sceptical" rating overall (2004, 1572). Steve Graybow is kinder to this album in his article "Jazz Notes: The Art of Composition" (2001). In discussing the sound of Zooid he mentions,

> If it seems that Threadgill's new material would be jarring, dissonant, or hard on the ears, nothing could be further from the truth. The music is, not surprisingly, bereft of many of the things immediately taken for granted in standard composition, such as identifiable themes and recurring motifs. It is not, however, without melodic fluidity. Much of the music floats upon deliberate tempos, with the musicians pushing, probing, and exploring each other's angular lines, moving the compositions into uncharted and unexpected territory. In fact, the overall effect is so deliberate and often lulling that the listener might not realize just how "out there" the music is. (Graybow 2001, 44)

Hank Shteamer's liner notes to the box set of recordings titled *The Complete Novus & Columbia Recordings of Henry Threadgill & Air* (2010a), describe and evaluate each of the many tracks included on the eight CD set. Spanning 1978 to '96, the box set contains a substantial amount of Threadgill's recorded output from this period. Shteamer's liner notes provide an account of every track, highlighting the range of musical influences, compositional techniques and individuality present in these recordings. Perhaps written as a listening guide, the liner notes generally describe the overall structure of each track, noting solos, melodies and other features. In doing this, Shteamer has produced an extensive picture of this period of Threadgill's career, one considerably larger than the other texts listed here.

Mentioned previously, Ethan Iverson's interview with Threadgill is published in a

series of entries on his blog *Do The Math* (2011b, c, d). A final accompanying entry contains Iverson's appraisal of Threadgill's music, discussing four Sextett recordings and one from Zooid (2011a). Given Iverson's background as a pianist his critique differs from those mentioned previously, focussing on more performance-centric features. Iverson discusses key centres, harmonic structures and orchestration as well as more emotive reflections of each track. His account of the Zooid track, *Polymorph*, provides an interesting viewpoint of Threadgill's relationship to the blues.

> Threadgill's natural blues sensibility keeps him grounded in something real. The conclusion of "Polymorph" is thrilling because the magician's cape swirls out of the frame just enough for us to perceive that real blues in an unadulterated form. (2011a)

While none of the authors here approach Threadgill's music from a wholly analytical perspective, their assessments are valuable. The few texts included here that discuss Zooid, confirm and expand upon this author's own initial evaluations of this music. Of the remaining, while they provide excellent background information the works that do not cover Zooid will not be used further.

Scores

The author has been provided copies of a number of Threadgill's hand written cello and guitar parts. As well as informing the transcriptions produced for this project, the documents offer a window into Threadgill's process, demonstrating his notation system and offering evidence of the ensemble's rehearsal and performance practice. Extra musical writing accompanies each part (presumably written by the performer

using the part) noting the various arrangements and modifications Threadgill has developed for the piece. This information will be used during analysis in Chapter 3.

Music Analysis

At the time of writing, there are only three publications that deal with analysis of Threadgill's recent music with Zooid, each to varying degrees. As previously mentioned, the dearth of material concerning Threadgill generally and regarding analysis of his music specifically is concerning given his prolific and creative output. This literature provides an important base from which to approach this project.

Published on his blog *Dfan Says*, Dan Schmidt provides a number of entries detailing his investigation of the Zooid composition, *To Undertake My Corners Open* (2012, 2014a, b). The three entries appear to be a "work in progress," with Schmidt explaining the various stages of his research into this composition, ranging from initial hearing to transcription analysis. Schmidt focuses on identifying formal structure within this work, detailing various sections discovered in transcription. By comparing harmonic relationships within the transcribed score, he identifies related pre-composed and improvised solo sections within the piece. This is achieved through analysis of the guitar and bass accompaniment, identifying repeating harmonic patterns generated between the two. While limited to structural analysis, this is significant work. It indicates there is pre-conceived harmonic progression that can be identified in this music, something not easily determined from initial hearings.

Chad Taylor provides an academic examination of Zooid in his masters dissertation,

"Henry Threadgill's Zooid: An Examination of Form and Process" (2015). Taylor gives a wide-ranging study of various musical features, identifying eight characteristics of Threadgill's Zooid music including approach to form, meter, phrasing and harmonic process. In particular, his explanation of Threadgill's harmonic process is illuminating and gives substance to the intervallic approach discussed in multiple interviews. Taylor continues this intervallic focus in his analysis of Threadgill's solo on the Zooid track, *See The Blackbird Now*. His analysis is concerned with developing an understanding of the effect the intervallic system has on improvisation in the ensemble by comparing the intervals used in Threadgill's solo to the intervallic information contained in Threadgill's handwritten score. Beyond this, Taylor has included a number of transcribed interviews with Threadgill's band members, further explaining the processes in Zooid.

The remaining analytical text is an academic paper from Richard Savery titled "The Improvisation Techniques of Henry Threadgill" (2014). Savery examines a number of different aspects of Threadgill's composing, discussing a number of ensembles, including Air, the Sextett and Zooid. He echoes Taylor's explanation of Threadgill's harmonic process, though given the format, with far less brevity and without reference to any transcribed material or score. As Savery admits, his paper does not thoroughly investigate Threadgill's approach having "only touched on some of his ideas" (2014, 6).

Schmidt, Taylor and Savery have all produced valuable research into Threadgill's music. In particular, Taylor has produced a substantial work covering a number of different innovative musical practices evident in Threadgill's music for Zooid. The

current research project approaches this music from a different perspective, examining concepts and techniques relevant to the author's performance approach. Additionally, the author aims to apply Threadgill's concepts to his own musical practice, producing new music that explores these ideas in the creative sphere.

Chapter 2 – Methodology

While this project focuses on understanding the musical approach of Henry Threadgill's Zooid, its broader aim is development of the author's creative practice. Consequently, this study is not designed to produce a comprehensive picture of the musical practice of Threadgill, but instead focuses on uncovering concepts relevant to the researcher's musical practice. The true value of research findings will be in their application. The project's research methods are designed to promote the genesis and growth of creative activity. There are five activities that contribute to this goal: Selection of Recorded Works, Transcription, Interviews, Analysis and Creative Application.

Initially, four of Threadgill's recorded works will be selected based on relevant musical features evident in preliminary examination. These works will then be transcribed in preparation for further analysis and inclusion in the written component of this project. Interviews will be conducted with musicians associated with Threadgill, namely Liberty Ellman, Christopher Hoffman, Jose Davila and Brandon Ross. Subsequent analysis of the transcribed works will be informed by the information gathered in interviews. Idiosyncratic devices and approaches identified in analysis will be used in the composition and performance of new works with the author's ensemble Slow Code. An evaluation of these works will take the form of self-reflective assessment.

Selection of Recorded Works

The selection of material appropriate for analysis is an important part of this project. This project was initially conceived encompassing the entirety of Threadgill's recorded material, selecting a number of pieces from various ensembles he has led or participated in, and in doing so, determine a stylistic progression. While this broad scope remains worthy of further investigation (it is worth reiterating the near non-existence of research into Threadgill's music), early research into Threadgill's music for Zooid uncovered considerable complexities and unusual approaches to improvised music, prompting a tighter focus.

The selected Zooid recordings for this project take into account three main factors: the perception of structural elements (repeated figures, defined sections), melodic and rhythmic content, and resonation with the author's aesthetic approach. Initial engagement with the music of Zooid proved difficult; it is often densely populated, without apparent delineations of composed melody and improvised soloing, and a consistent meter is rarely apparent. For the author, repeated listening was required for certain works to reveal structural organisation. Comprehension and emotional connection to a recording, with reference to one or more of the above factors, finally determined its inclusion in this project.

Transcription

The practice of transcription is a valuable process for building an understanding of the Zooid pieces chosen for this project. Not only is a written score produced, analogous

to the recording, there is considerable time spent converting recorded sounds into scored music producing an intimate familiarity with the minutiae of performance. Emeritus Professor Patrick Dorian describes this process, highlighting the benefits of creating a transcription.

> Transcription is one of the most challenging yet beneficial exercises that aspiring and accomplished jazz artists undertake. Meticulous transcription becomes a lesson in total ear training … Listening to the entire solo many times is usually not sufficient for learning the solo. There is too much detailed information to absorb in terms of pitches, rhythms, phrases, nuances, etc. (1996)

As discussed in the previous chapter, the use of transcription in jazz and improvised music is burdened with issues regarding the representation of a largely aural style within the notation of Western classical music. Nettl and Russel (1998), Bailey (1993), Berliner (1994), Hodson (2007) and others have presented views of the advantages and limitations of the practice. In essence, the major concerns with transcription of jazz and other improvised performances is the tendency to treat the transcribed score as a pre-composed work (Bailey 1993). While the act of improvisation is inherently different to that of a pre-composed work, a transcribed score can only be considered a representation of one individual's (often not the performer) perception of a work (Berliner 1994). These issues require transcription to be treated appropriately as a source for analysis, with awareness that the format can only partially represent the complexities of a recorded performance.

A thorough model for transcription is presented in Berliner's *Thinking in Jazz* (1994). Ranging from small excerpts of individual solos to full ensemble scores, Berliner's work reflects his exhaustive investigation into the practice of jazz performance. The current study will produce transcriptions of three Threadgill works in a similar style to Berliner's full ensemble scores to aid in the investigation of form, melody, harmony, ensemble interaction and other musical features in Threadgill's Zooid, while excerpts of these transcriptions will be included within Chapter 3 to allow continuity with the written analysis.

The full scores are annotated with additional descriptions and harmonic information (as discussed in the following chapter and in Appendix 1). Additionally, a number of diacritical markings are included to represent various instrumental techniques as well as techniques specific to the fretted instruments, guitar and bass guitar. These are shown in Figure 1.

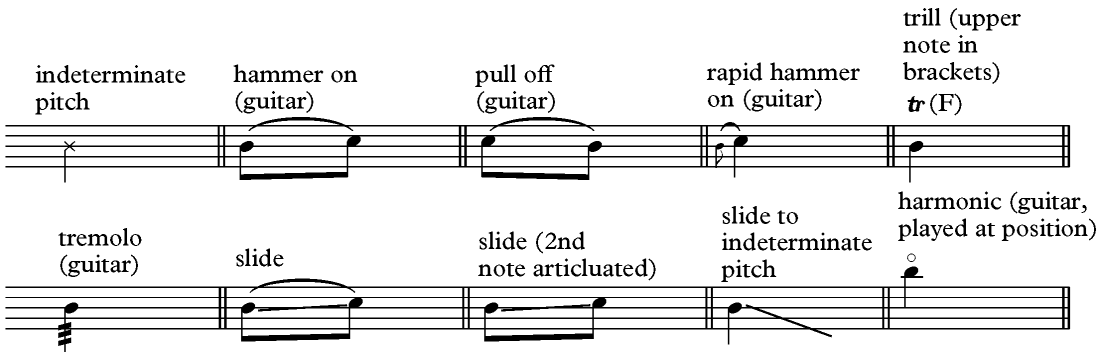

Figure 1 - Diacritical markings

Interviews

Interviews will be undertaken with current and previous members of Threadgill's

ensembles, in order to gain an understanding of Zooid's musical approach from the people most closely involved with the process. These will largely follow the methods used by Berliner (1994), Monson (1996) and Jackson (2012). All interviews will be recorded electronically or with detailed notes and consist of a semi-structured conversation, including a series of questions regarding Threadgill's concepts, the development of Zooid's performance approach in ensemble and musical background as well as opportunity for open-ended discussion. Pertinent quotes will be selected and transcribed from the interviews for inclusion in the exegesis. For ease of reading, quotes may be minimally edited. In light of this, interviewees will be given the opportunity to proof any attributed quotes to ensure their intended meaning has been conveyed.

For this stage of the project, interview participation gained from a number of musicians, including Zooid members Liberty Ellman, Christopher Hoffman and Jose Davila, as well as previous Threadgill collaborator Brandon Ross. Threadgill himself was also approached to be an interview participant but was not able to take part. In communication with the author, Threadgill expressed encouragement of the author's efforts in studying his music. The author would like to thank Threadgill for the time and generosity given to him while on field travel in New York.

Analysis

The complex sound of Zooid presents significant challenges for analysis. For the author, the works are beguilingly obtuse; structure and forms are alluded to without clear delineation, atypical harmony is present between the contrapuntal playing of the

ensemble, and the divisions between composed and improvised material are ambiguous.

To account for this, analysis will consist of two modes of enquiry: structural evaluation and the identification of idiomatic practices. Initially, transcriptions will be examined for structure delineating pre-composed sections[3] and improvised passages[4], and smaller structures within these sections. Secondly, analysis of idiomatic practices will involve gathering information concerning performance and compositional practice from the interviews conducted in this study and in other publications. This information will be further informed by examining the transcribed works for evidence of these and any other apparent musical concepts and techniques.

As previously mentioned, Threadgill objects to many of the implications of the term "jazz" and instead refers to his work as "creative improvised music" (Shteamer 2010b). While these objections are valid and relevant to the issues regarding the public perception of jazz today, the music he currently produces employs many practices reminiscent of jazz, notably extensive improvisation and group interplay. Therefore, the analysis methods used in this study include those used in jazz focussed research by Monson (1996), Berliner (1994) and Hodson (2007). At the same time, this study must approach analysis with an openness to understand this music on its own terms. Kenny's description of Ekkehard Jost's use of a "tailored analysis" is pertinent here.

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[3] These will be referred to in future as "written material." This term was used by the Zooid ensemble members in reference to pre-composed sections of the works.

[4] For similar reasons to Footnote 1, "solo" will be used in place of the term "improvised passages."

> Jost tailors his analytic method to suit the personal styles of each Free Jazz musician, whose "only point of agreement lay in a negation of traditional norms"…Thus, analysis is made to serve each individual work – an apparent contradiction of the top-down or "one serves all" ideology promoted by many other methodologies. (Kenny 1999, 61)

This research will be undertaken with an effort to respect the individual creativity of the source material while producing results that aid in the development of the author's creative practice.

Initial analysis will be concerned with defining structure within the works. Without access to Threadgill's original scores (as is the case for the majority of transcriptions in this study), informed estimations concerning meter, harmony and form will be made. For example, it became apparent after some research that meter is not consistent within the ensemble. The drummer, Elliot Kavee, is often directed to play in an alternate meter to that of the other band members (Taylor 2015). The musical effect is one of ambiguous continuity; a driving pulse is maintained throughout, yet clear downbeats indicating bar divisions rarely occur. This practice of multiple meters is innovative and has great potential for further creative investigation. However, in the interest of producing a legible transcribed score, bar divisions will be estimated initially but may not necessarily reflect the original intent.

While every effort has been made to decipher Threadgill's intentions, without reference to original material, the transcriptions included in this study are a conscious

approximation, aware that interpretive limitations are always present. This being said, sheet music will be sourced from Zooid to aid the transcriptions produced here. Once form has been determined in the transcribed pieces, this will be graphically represented using diagrams similar to those used by Berliner (1994) and Jost (1981).

As discussed further in the literature review, it is beyond the scope of this study to fully explore the ramifications of notational accuracy in transcription. That said, findings from approximate notation could lead to successful creative applications. In this study, if information found later to be imprecise has given rise to a new effective musical approach or practice, the ultimate aim of furthering creative practice has been achieved. The use of preliminary results in composition and performance can provide an opportunity for further discovery and orient research towards more effective analysis concerning creative outputs.

In addition to this, the transcriptions included in the appendix and the excerpts contained in the following chapter should not be considered fully representative of the recorded performances they draw from. As previously stated, transcriptions at best can only present a partial amount of information contained within a musical performance. Without reference to audio recordings, there can be a tendency to interpret transcriptions literally. The transcriptions offered here are placeholders for the aural information they attempt to represent and a means of presenting concepts within the discourse of the exegesis. As a result, the author strongly recommends listening to the Zooid recordings in tandem with this text.

A secondary stage of analysis will identify idiomatic practices. Literature and

interviews suggest Threadgill has developed innovative approaches to harmony, composition, group interplay and form. These practices will be discussed in interviews with members of Zooid and evidence sought in the transcribed scores. This will be presented in three ways: written analysis accompanied by transcription excerpts, intervallic analysis of single and multiple parts, and larger structural analysis using a graphic representation.

These analytical methods were largely confirmed by Taylor's study (2015). Generally, his work validated approaches taken in this project, but there were a number of contrasts. For example, a point of difference was observed in Taylor's use of pitch set theory in analysis. In particular, Taylor employs interval vector analysis in investigating Threadgill's intervallic approach, an approach similar to that outlined by Forte (1973). While Taylor's use is convincing, this style of analysis was not deemed to be appropriate for the current project. Interval vector analysis is written in a way not immediately evident to some musicians. Consequently, a different analytical style, drawing from Threadgill's interval set notation, was developed to enhance the accessibility of this project. Other analysis methods unproductive for this project included those offered by Persichetti (1978), Waters (2011) and Kenny (1999).

It is likely that there may be other idiomatic practices, not referred to in interviews, discovered in the overall investigative process. These practices will require a suitable analytical method, employing alternative approaches where required. Ultimately for the analysis to succeed, appropriate methods must be used to reveal the innovative approaches Threadgill uses in Zooid. In relation to this, Westendorf states, "The question ever present in my mind was: Exactly what are the best ways to examine and

write about these (and other) free jazz works?" (1994, 157). Analysis in this project will be approached with this ethos.

Creative Application

The development of creative practice within jazz music is commonly described as "imitation, assimilation, innovation," a quote attributed to trumpeter Clarke Terry (Steinel 1995, 9). The three-step process delineates the learning stages essential to forming an individual musical approach. Walter Bishop Jr. elaborates,

> You move from the imitation stage to the assimilation stage when you take little bits of things from different people and weld them into an identifiable style—creating your own style. Once you've created your own sound and you have a good sense of the history of the music, then you think of where the music hasn't gone and where it can go—and that's innovation. (Berliner 1994, 120)

Within the current study the "imitation, assimilation, innovation" process, including the composition and performance of new works, will be undertaken concurrently with other research activities. This will allow an experimental and exploratory creative response to research findings throughout this project. This process begins with an imitative stage, compositions will be written emulating different features of Threadgill's music discovered in analysis. Through performance and further composition, discovered techniques will be assimilated into the author's creative practice. As both imitative and assimilation efforts progress, innovation will be sought

through experiments in incorporating Threadgill's conceptual ideas and exploring any further creative implications of these musical approaches. It is not the aim of this project to produce new music that merely reproduces the approach found in Zooid (despite the aforementioned 'imitation' stage). Any new compositions will be produced as a meaningful creative response to Zooid. Through adaptation and experimentation, a musical approach informed by Threadgill's concepts will be pursued rather than a verbatim application of these concepts. The development of creative practice is not expected to be complete with the submission of this thesis, instead it is hoped that the project will illuminate further directions for musical exploration after the culmination of this formal study.

One studio recording and four live recordings featuring new compositions will be performed by the author's ensemble Slow Code. This material will be included as an integral part of this study. The recordings span the duration of the project and represent the developing approach to performance over this period. The live recordings are listed here with venue, city and performance date. These will be referred to subsequently by a shortened title included here in parentheses. The live recordings are as follows: Uptown Jazz Cafe, Melbourne, 5 February 2015 (Uptown); University of Tasmania Conservatorium of Music, Hobart, 18 March 2016 (UTas); 303, Melbourne, 13 July 2016 (303); Smith's Alternative, Canberra, 6 April 2017 (Smith's). The studio album was recorded on 17 and 18 July, 2016 at Pughouse Studios, Melbourne, engineered and mixed by Niko Schäuble and mastered by Liberty Ellman. This recording will be referred to as 'album' in the text. For full track listings of each recording refer to Appendix 2.

Slow Code consists of four members: Jack Beeche, Dan Mamrot, Aaron McCoullough and the author.

Jack Beeche is an Australian saxophonist based in Melbourne. After graduating from the Australian National University School of Music in 2004 he moved to London where he immersed himself in the local jazz scene, attending jam sessions and performing in the UK and Europe. He regularly travelled, studying with top international jazz musicians, searching for his own approach to improvised jazz. After becoming highly influenced by alto saxophonist Lee Konitz who strives to improvise entirely in the moment, Beeche returned to Australia in 2009 where he settled in Melbourne. Beeche works regularly with jazz ensembles in Melbourne, performing at festivals and touring nationally. In 2015 he completed his Masters of music performance at Monash University and released his first album Golden Blue.

Dan Mamrot is an improvising guitarist who has performed with many esteemed Australian and international artists including Jim Black, George Garzone, Stephen Magnusson, Oliver Lake, Jean Michel Pilc, Ben Robertson, John Taylor and more. He is currently performing, touring and recording with some of Australia's finest musicians and has studied music in India, Italy and New York.

Aaron McCoullough born in Wollongong, Australia holds a Bachelor Of Music with Honours, a Masters of Education, and is currently a Doctoral Candidate. The endowment of numerous awards and scholarships has enabled him to travel both nationally and internationally studying with many of today's leading improvisers and music educators. Central to Aaron's skill set, however, is his distinguished ability to

adapt to various musical contexts. This is recognised by his demand as an accompanist with a variety of renowned artists, some of which include: Dr Tony Gould, Joe Chindamo, Daniel Gassin, Hugh Stuckey and Hetty Kate. Aaron's work as an accompanist has led to numerous international and national appearances at festivals and venues throughout Australia, New Zealand, and the United Arab Emirates. He is also actively involved in composing and performing his original music, which has lead to national touring and commercial release.

Gareth Hill is a Melbourne-based musician, specialising in double bass and bass guitar. After studying violin from aged eight, a suggestion from his orchestra conductor prompted him take up the double bass. The tutelage of renowned bassists Eric Ajaye and Max McBride in Canberra guided Gareth to perform jazz, classical and other music in the capital's thriving music scene. Gareth's dedication to his art led to travel to New York where he studied with legendary bassists Rufus Reid and John Patitucci. In addition to this, his academic studies allowed him to graduate from a Masters of Philosophy (Music) in 2008 at the Australian National University. Additionally, he has toured and performed with diverse artists and ensembles such as jazz greats Bernie McGann, Bob Sedergreen, Ted Vining, Don Burrows and Mark Levine, as well as classical composers Thomas Ades and Brett Dean. After relocating in 2008, Gareth is deeply involved with the vibrant music scene of Melbourne with ensembles Blow, The End and the Ted Vining Trio.

As this project is situated within the academic context, it is worth mentioning that Threadgill's relationship to institutionalised music learning is a strained one. For him and some other jazz musicians, the rigid structures of curriculum and graded

assessment are not congruent with pursuit of creative music making. Jonathan Lorentz's thesis on saxophonist George Garzone outlines Garzone's related criticisms of institutional jazz.

> [He] spoke of being 'totally against school' in our opening interview and further problematized the codification of improvisation studies in jazz education … Garzone identified the irony of a jazz students' dependency on written visual aids, and remarked in astonishment that 'they need to see material' … He expressed further concern for his students' ability to learn aurally, a skill necessary for expressive improvised performances. (Lorentz 2008, 27-30)

Threadgill himself asserts that institutionalised learning is not conducive to students developing their own individual musical approach.

> … now, institutions, universities, colleges and music schools have all come up with solutions that's been taught to all of the players out here, and they all have a way of approaching stuff. I don't consider that creative at all. See, the way that Johnny Griffin came at a piece, as opposed to the way Paul Gonsalves came at a piece as opposed to the way that Eddie 'Lockjaw' Davis came at a piece, the same piece of music, you couldn't even compare … But now everything has been studied, catalogued, and made a methodology. It's a methodology now that's taught, and players learn these methodologies, and they're playing methodologies more than they're playing ideas. (Shteamer 2010b)

As previously mentioned, this research is not concerned with producing a comprehensive picture of Threadgill's process or methodology. Instead, the aims are to uncover innovative musical practices and concepts and use these to further the researcher's creative practice through the creation and performance of new works. In an effort to acknowledge Threadgill's valid concerns about institutionalised music education, this project deliberately allows space for creative investigation of the music of Zooid. This attempts to avoid simply replicating Threadgill's methods by experimenting with and developing these ideas through the presentation of numerous performances during the research period.

Development of the author's musical practice will be achieved with the production of new music. Drawing from the performance research of Haywood (2014), this research will be evaluated through a self-reflective assessment of compositions and their performances, including discussion of the adaption of Threadgill's concepts discovered in analysis. It is worth mentioning that this assessment is not intended to be a comprehensive investigation of the ensemble dynamics and workings of Slow Code. These aspects were deemed to be beyond the scope of this project and are suggested as a potential area for further research in the conclusion.

Chapter 3 – Analysis

The analysis in this project is concerned with identifying compositional techniques and musical practices present in the music of Henry Threadgill's Zooid that are applicable to the author's creative practice. As previously stated, this study is not intended to be a comprehensive survey of Threadgill's music for Zooid, rather it focuses on discoveries that may generate further creative works and practices. To this end, four aspects of Threadgill's composing and performance practice for Zooid will be covered here: Form Modification, Harmony, Melodic Conception and Counterpoint.

This chapter draws from a number of sources including published interviews with Threadgill and other associated musicians, interviews performed in the fieldwork of this project, three recordings of Henry Threadgill's Zooid transcribed by the author, guitar and cello parts provided respectively by Ellman and Hoffman, and a small amount of related research. In particular, the following analysis has been developed with close reference to the fieldwork interviews, using these primary sources to shape the way the transcriptions are contextualised. The collecting and processing of all information sources occurred for the majority of the research period and allowed an evolving understanding to develop. This process was linked to the project's creative aspect. New discoveries inspired creative ideas that were then used to generate original compositions. In turn, the creation and performance of these compositions provided a new perspective of the concepts in Threadgill's music. While the effect this has had on the author's creative practice will be detailed in the following chapter,

an account of the accompanying research process is relevant here.

Early experience with Zooid's music exposed obtuse features; bar lengths seemed irregular if not indeterminate, differentiation between written and improvised material was unclear, and unfamiliar harmony occurred between the complex counterpoint of the ensemble. In order to begin understanding this seemingly impenetrable music, it was proposed that transcriptions be produced of a number of Zooid recordings. While the process of transcription remains problematic due to its subjective nature,[5] it was anticipated that aspects of Threadgill's music that may be relevant to the author's creative practice could be discovered from analysis of transcribed scores. Additionally, it was envisaged that any issues arising from transcriptions could be mitigated through an understanding of the limitations of this technique and the input from fieldwork interviews.

Transcriptions of *After Some Time* and *To Undertake My Corners Open* from the Zooid album *This Brings Us To Vol. 1* and *Polymorph* from *This Brings Us To Vol. 2*[6] were produced initially with no reference to Threadgill's written scores, which are not publicly available. The transcription process, while arduous at times, allowed for a gradual and more intimate association with these works. An early decision to reduce each piece to a time signature of 4/4 made transcribing Zooid's complex metrical changes manageable. At a later stage the transcriptions were referenced as a whole and estimations regarding bar divisions could be made.

[5] For a more complete discussion of this issue refer to pg. 24-25 of the current study.

[6] For full album details refer to the included Discography.

Early analysis of transcriptions was informed by the small amount of available literature relating to Threadgill's compositions. Initial information came from published interviews with Threadgill and guitarist Ellman, and later through from Sydney-based drummer Alex Masso. Masso had attended a workshop with guitarist Brandon Ross, a member of Threadgill's earlier Make A Move and Very Very Circus ensembles, and offered a recording of the workshop presentation. Ross's workshop described new details of Threadgill's harmonic system, including notation and a harmonic generation process. While questions remained as to how the system was employed, this information provided further insight into the processes involved in Zooid. Taylor's inclusion of an original handwritten score and guitar part of Threadgill's composition *See The Blackbird Now* (2015, 23-25) was also enlightening, giving greater insight into Threadgill's compositional techniques, especially his harmonic notation.

Further information was gathered during a fieldtrip to New York City. As well as attending a number of Zooid performances, interviews were conducted with members of the ensemble, Liberty Ellman, Christopher Hoffman, Jose Davila and previous Threadgill collaborator Brandon Ross. These interviews revealed additional information regarding Threadgill's practices as a composer and interestingly, as a bandleader. Interviews and other informal discussions with these musicians provided a unique picture of their involvement in this music, often explaining the process they went through in adapting to Threadgill's concepts. Hoffman explains the intense difficulties involved in learning to play in the group.

> Obviously I had to be pulled up a little bit and helped cos', I mean my head would hurt at the end of a rehearsal. And the amount of counting, and then the

> other thing that would happen would be that Jose, the tuba player, at one point I was stomping so loud and he'd say, "Hey man, you gotta chill out on that. It's actually kind of distracting especially when you get off, you know." And I said, "Yeah, of course. I understand." He said, "I used to do it too." My leg, I would basically come home and my neck would be like super tense and my left or right leg would just be like sore and all fucked up. And I would just hear loops in my head. Wake up in the morning, going, going, going. I basically allowed myself to be mind controlled by Henry Threadgill. And I love it. (interview 9 July 2015)

Ellman describes a similar intensity in Threadgill's approach to maintaining spontaneity in performance.

> One thing I've learned about Henry is that he doesn't want anyone to be too comfortable. And in his music you can't play licks and routine. And if he feels like you are developing routine on the music … he's probably going to try to sabotage it. And he'll do it in front of a big crowd, you know you go to play a festival for four thousand people and right before you go on stage he'll say, "Oh you know what? Let's play this other thing." And everyone goes "What?" And, I think he loves it, he loves the excitement of that. But I think he's right, it really makes you draw on your inner resources. (interview 11 July 2015)

Travel to New York included an opportunity to attend performances by Zooid as well as a concert series by Threadgill's other ensemble, Double Up. This exposure to numerous live performances of Threadgill's music revealed other aspects not present in recordings. Threadgill's interaction with other members and direction of the entire group was seemingly benign; pieces were discussed softly and briefly, if at all, with count-ins performed with the same quiet intensity. Direction of the group during pieces was minimal, only occasionally indicating downbeats, possibly of new sections. While this direction was relatively limited, it appeared to be effective,

propelling the music with energy in a variety of different moods. Zooid performances occurred at the Village Vanguard in New York's Greenwich Village district, where one band customarily performs two sets each night from Tuesday to Sunday of a week. The opportunity to observe Zooid perform over six consecutive nights not only provided what Jackson would describe as a "multisensory experience" (2012, 99) of music making, it also exposed a growing rapport between the musicians. In particular, emotional intensity was heightened in performances towards the end of the week.

Other valuable research material was gained during fieldwork in the form of Threadgill's handwritten guitar and cello parts, provided by Ellman and Hoffman respectively. These documents revealed the material the musicians work from in performance, including the harmonic information and structure for each piece. When compared to the completed transcriptions, these parts exposed the difficulties involved in interpreting this music without the written scores. While it was possible to delineate larger melodic and solo sections reasonably reliably, time signatures and the placement of bar lines could not determined as clearly. Threadgill organises his music so that each bar generally contains one melodic statement. In the transcriptions produced for this project, it was not possible to accurately determine where these bar lines should fall before referencing the written guitar and cello parts.

In comparing the transcriptions to Threadgill's written parts, it was apparent that the performance approach in Zooid obscures the notated material from which the group works. Certainly, without the aid of Ellman and Hoffman's parts, some structures would not be as apparent in the transcriptions produced in this study. The following sections discuss a number of concepts and techniques Threadgill uses in Zooid, all of

which contribute to the complex soundscape encountered listening to Zooid.

Form Modification

> *I gather information and then I process the way I process. I come to rehearsal with much material that is written out, but that's only a starting point. Everything is written out, but it also doesn't mean a thing. The music is totally modular because what is here can be here or what is here can be there because this is what we discover in discovery. This is what needs to be brought out by music analysts and musicologists. - Threadgill (Iverson 2011b)*

As the above comment indicates, form is a variable element in Zooid. Every performance is an opportunity for Threadgill to develop new arrangements for his pieces. For Threadgill, the compositional process does not end at the written page. His written scores are treated as starting points, as material ready to be reworked into new configurations. As Taylor notes, "Rehearsing is not just a way to learn Threadgill's music, but it is also part of the composition process" (2015, 65). Threadgill states,

> I go into rehearsal to look for its discovery. What's on paper is a place to start. I am playing, and then this guy plays this note wrong, and then I say, "Oh, really? Just keep it like that." I say, let's start at measure two, and someone thinks I mean start on the second beat. So I just say, "Hey, start on the second beat." Also, when someone doesn't play 'cause they forgot to come in. Well, that's discovery … These little things you were talking about, the "mistakes," affect form. The same thing happens in research labs where most of the discoveries are made through mistakes. (Iverson 2011b)

Threadgill is open to the dynamic atmosphere of rehearsal, where misunderstandings

and mistakes are opportunities to uncover new aspects of the notated score. Rehearsing is essential for this to occur. Multiple sessions are held before any performance. Without this, the ensemble would not have the opportunity to learn and develop Threadgill's compositions. Ellman describes the unique atmosphere Threadgill creates in these sessions.

> The work we do in rehearsal is as fun as, or even more fun than, the actual performances. That has to do with Henry's approach to rehearsing, explaining the music and getting us to develop the music to where it's second nature. It's getting rarer, for economical reasons, to have bands that rehearse all the time. Even if we play the Jazz Gallery, we'll rehearse five or six times. (Chinen 2011)

Threadgill's compositions consist of a written score of notated material for each instrument with accompanying harmonic notation (Threadgill's harmony will be covered in the following section), divided into lettered or numbered sections. An arrangement of a composition typically consists of a combination of entire or partial sections played as notated or used as vehicles for improvisation. Ellman describes this in contrast to common jazz practice.

> So any piece that might have, say we have one page of music and it says A, B, C. So you look at it. Now a normal jazz musician would look at it and start at the top, play the melody and then solo over it. Why would you do that? Why would you have every form be the same and everything? Why would you start like that? … [Threadgill] just says, "We're going to start on C with your solo, then we're going to play the melody at C. Then we're going to go to A, play the melody at A, and he's going to solo at B. And his solo at B is going to be B forwards and B backwards harmonically." And we'll be in rehearsal saying, "Oh really? Ok." (Interview 11 July 2015)

As previously mentioned, a composition's arrangement can change nearly every performance. For Ellman, this creates a distinct atmosphere.

> It's actually being open. Being willing and actually desiring to be in a situation of unpredictability. Which is part of the thrill of the music. Which is totally the point. Henry is constantly creating that experience because not only does he have his unique harmonic language and rhythmic sensibility that really drives the feel of the music, but also he's studied a lot of contemporary composers and the way they use form. He likes to talk about Stravinsky and apparently he used all these cards, and he would write sections of music on these cards and he would put them on the wall and move them around. And say, you know, "Oh, what if, maybe this goes here!" And, a lot of the times we play music in Zooid, … he changes the form. (interview 11 July 2015)

Central to this approach is a desire by Threadgill to constantly challenge the members of his ensemble to be fully engaged in performance. While the content of a composition may be familiar to the group, form modification encourages focus and intensity within the ensemble. Threadgill explains his motivations for this, referencing theatre performance techniques.

> It's about challenging the musicians. You've got to have people in a position where they don't really know, where they're a little bit off guard, a little bit off balance, and they can really be spontaneous and extemporaneous. Albee the playwright said the one thing about a really good actor is it gives the directors a chance to really mess something up. They know it so well, they really mess it up, because they know it so well … Familiarity makes you kind of absent from really understanding something. So you need musicians to be challenged. You don't want them to come up and say, "Oh, I know what that is" every time. You're not going to get anything. You're not going to get anything fresh

> out of them. They need to be challenged every time they come up. (Oteri 2010)

The concentration required from musicians encountering new structures is different to that when dealing with more familiar material. As the music changes from performance to performance, the ensemble cannot rely entirely on previous experiences. Threadgill values this approach so highly that he has stated of his compositions, “If I can’t find another way to play it, I’m not going to play it” (Oteri 2010). Hoffman spoke of the atmosphere this creates in performance.

> So his thing is like, never repeat the same performance … I think he just wants to keep himself interested. And for him, locking down and committing to anything, he’s not really interested in doing that. And it keeps all of us on our toes. This music is what’ll keep me from getting Alzheimer’s. It’s so intense. (interview 9 July 2015)

Haywood’s performance-based research into the conditions for meaningful ensemble improvisation (2014) provides a counterpoint to this approach. In contrast to Threadgill’s highly rehearsed and complex pieces, Haywood deliberately chose repertoire that was comparatively simple, ranging from single line melodies with accompanying harmony to loosely structured free improvisations. Additionally, repertoire was not rehearsed before performances and an ensemble of musicians that had not performed together previously was chosen. While this seems at odds with Threadgill’s approach, ultimately the performance atmosphere was similar for both ensembles.

Without prior rehearsal or a history of performing together, the musicians in

Haywood's group relied on maintaining close attention to the other members of the ensemble. For Haywood this uncertainty was advantageous for the performance.

> As mentioned previously, aspects such as this that relate to arrangement were not discussed prior to the performance. Highly attuned active listening was evident here, in that collective, instinctive variation in dynamics and intensity, along with intuitive departures from traditional roles were clearly demonstrated throughout. (Haywood 2014, 50)

While differing in approach and sound, Haywood and Threadgill's ensembles share a similar performance aspect: an atmosphere of uncertainty. Haywood's approach of unrehearsed, relatively simple material, and Threadgill's use of multiple rehearsals, complex material and modified forms, foster concentration within the ensemble and ultimately contribute to the generation of creative improvised music.

From an audience perspective, Threadgill's approach to form provides an experience with little or no recurring musical material. The constantly evolving structures within Threadgill's rearrangements make form delineation difficult, even for those familiar with the band's recordings or performances.

> And so you read, B might be six bars, and you do six bars this way, but it's long meter so it feels like twelve bars. You read it this way and then you read it this way, then you read this way. And so, as a listener, how are you going to pick up on that? What's happening now? You know, you're trying to pick it all out and then after that we'll play B and that'll be the end. (Ellman interview 11 July 2015)

Despite these complexities or perhaps because of them, Zooid's music remains for the

author enjoyable and enthralling. The combination of mystery and fleeting sense of ornate organisation gives a Zooid performance its unique characteristic. The regular indicators of form, melody, solos and even meter, are not easily discernable. This was so pronounced in live performances that the author quickly gave up trying to follow any of these features and instead simply allowed himself to be immersed in the entire musical atmosphere.

Through form modification Threadgill at once gives new life to familiar compositions, encourages engaged performances and remains elusive to his audience, even those familiar with Zooid. The three recordings transcribed for analysis each provide evidence of form modification and the methods Threadgill uses in rearrangement. The completed transcriptions were compared to their respective guitar or cello parts to determine what modification had been made for each performance. Some of the following descriptions refer to bar numbers. These bar numbers are drawn from the guitar and cello parts and correspond to the written material scores included in Appendix 1.

After Some Time[7] features perhaps the most straightforward arrangement of the three. Ellman's guitar part is divided into two sections, A and B. The recording opens with the written material of the B section played in full. This is followed by Threadgill's alto saxophone solo using the harmonic structure of the entire A section. The structure of the A section has been modified; each harmonic duration has been doubled making the section twice as long. This unique practice is commonly used in improvised sections, defined in Zooid as "long meter."

[7] For full transcription refer to Appendix 1 - Transcriptions.

> He'll try all kinds of contemporary compositional techniques that a lot of jazz people don't even consider. Like he'll say "we're going to start on the C section, with your solo on C and we're going to do that long meter." When he says "long meter" it means double the form. Like double the length. So if it was one chord for two bars, the next one for three bars, now it's four bars then six bars, or beats not bars, beats. (Ellman interview 11 July 2015)

In some arrangements there is a combination of long meter duration and the original marked durations, known as "regular meter." Hoffman explains,

> But then, [long meter] may be going along a certain way, but then one measure will be in what we call regular meter. So regular meter is how it's written and long meter is doubling of that. (Interview, 9 July 2015)

Taylor's research confirms this practice, further explaining that the numbers written beneath determine a chord's duration in regular meter. While the beat duration is normally doubled in long meter, he states that "the form could also triple or quadruple in length" (2015, 31). Jose Davila explained that long meter was an important stage in the early development of the music, "When Threadgill started using long meter, everything started opening up. The music started to breathe" (interview 17 December 2015). For Davila, the extra time of long meter allowed the group to better process each harmonic change, resulting in a more satisfying performance. Threadgill's harmonic system (discussed in the following section) contains a significant amount of information, so it is understandable that long meter would be an effective method of altering these complex structures for improvisation.

Following Threadgill's solo in *After Some Time*, Ellman performs a guitar solo using

a different form, the B section harmonic structure in long meter. This solo, accompanied by tuba, bass and drums, leads into the written material from the A section played by the same players, without Threadgill's saxophone part. The A section written material is repeated once more, this time with saxophone, finishing with a brief rubato ending. The entire form of *After Some Time* is represented graphically in Figure 2.

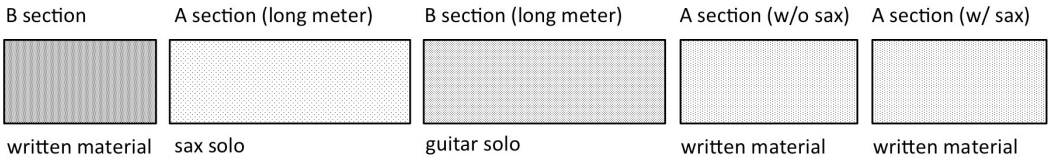


Figure 2 - *After Some Time* form

It is worth noting that the handwritten cello and guitar parts used here have numerous extra markings, presumably made to document previous arrangements. On Ellman's part of *After Some Time*, hand written instructions such as, "Henry drops out then we go to B," "Sto last 2 bar, A, B guitar, A sax, B theme" and "Guitar solo at A (L.M.) take chart out on B" reflect the numerous permutations of this piece. These markings are no longer used by the group. Threadgill's forms change so frequently that ensemble members ceased writing out new arrangements, choosing instead to memorise this information. Hoffman described the process of committing frequently varying forms to memory.

> It took a while for me, cos' I used to sit there and write down all of the arrangements that we had, and all the guys in the band they'd all say, "Don't write that down, don't write it on your chart at least." … I've got so many charts from the past with other band members with all these arrangement versions. And then you just stop writing out the arrangements. And you get

used to it and then you can memorise them. I mean we can memorise anything when we want to, you know. (interview 9 July 2015)

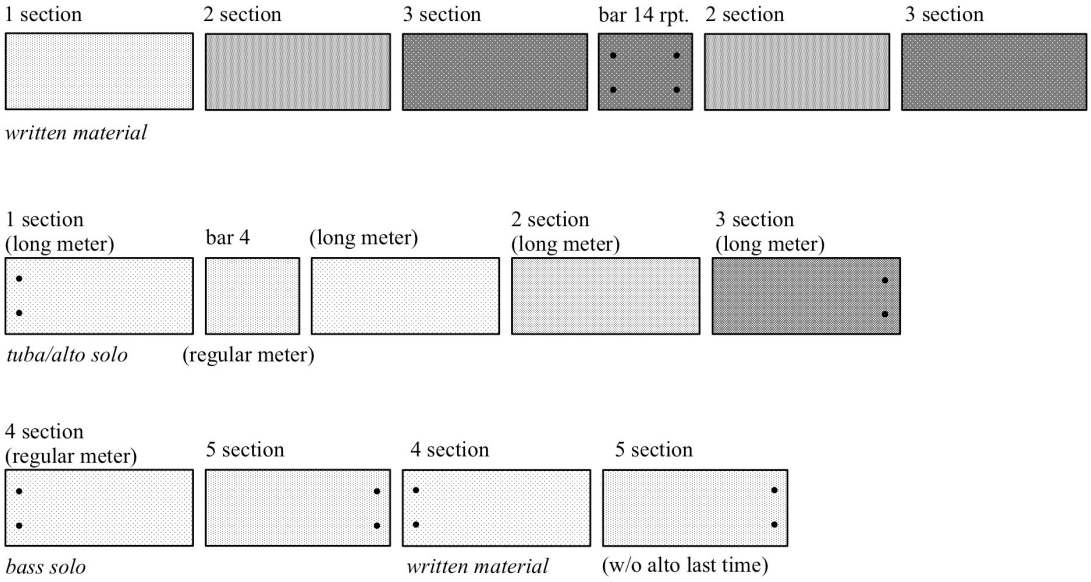


Figure 3 - *Polymorph* form

In comparison to *After Some Time*, the form of *Polymorph*[8] is more complex. Hoffman's written cello part is divided into five sections, numbered 1 to 5. A graphic representation of the form used in the transcribed recording is shown in Figure 3. Dots representing repeat marks have been included in this figure to assist in explaining the complex form. This marking is also included in Figure 4. The recording opens with the written material of sections 1, 2 and 3, with bar 14 in section 3 repeated, followed by section 2 and 3 again. Davila then performs a tuba solo using sections 1, 2 and 3, in long meter except for bar 4 in regular meter. In the supplied cello part, brackets are marked around bar 4 in section 1, indicating this bar is to be played in regular meter in solos. Threadgill follows, performing an alto saxophone solo on the same structure as Davila, while Stomu Takeishi performs a final solo over sections 4 and 5 in regular

[8] For full transcription refer to Appendix 1 - Transcriptions.

meter before the written material of sections 4 and 5 is played to close the piece. Initially Takeishi's solo is accompanied only by Ellman and Elliot Kavee. Ellman's accompaniment closely emulates the written material for sections 4 and 5, meaning that when the written material is played to finish the performance, a near seamless transition has occurred between solo and written material sections. Additionally, Takeishi continues to improvise in this final section, blurring the division further by embellishing and departing from the written material. The written material of section 4 and 5 is repeated six times, without Threadgill on the final repeat, leaving the remaining ensemble to end the piece.

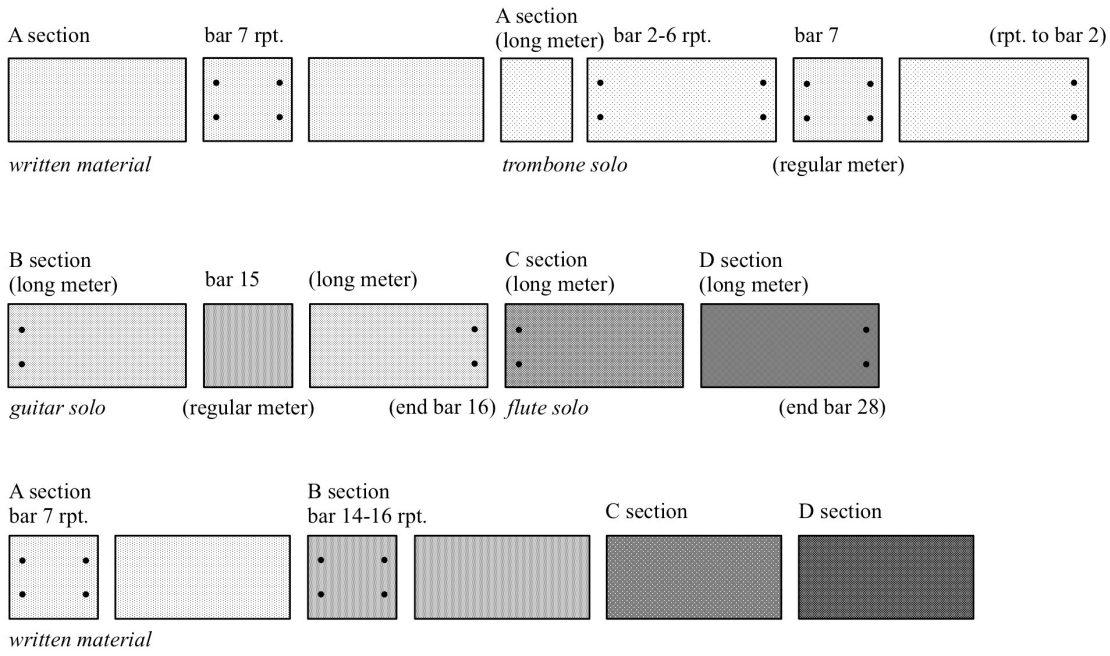


Figure 4 - *To Undertake My Corners Open* form

To Undertake My Corners Open[9] features the most elaborate form of the three pieces and can be seen in Figure 4. Consisting of four sections marked A, B, C and D, this performance opens with the A section featuring a trombone melody until bar 7. Bar 7

[9] For full transcription refer to Appendix 1 - Transcriptions.

features a guitar and bass pattern repeated four times before the entire group enters to perform the remaining A section. Davila follows with a trombone solo on a heavily modified version of the A section. The trombone solo form begins with the first bar of the A section in long meter then a repeated section of bars 2 to 6 in long meter. Bar 7 is played in regular meter, then followed by the remaining A section in long meter except bar 10 played in regular meter. When the form repeats the first bar is omitted, starting instead at bar 2 following the same repeats and long/regular meter modifications. Ellman follows with a guitar solo on three bars of the B section, bars 14 to 16. Again this form modulates between long and regular form, beginning with bar 14 in long meter, bar 15 in regular meter and returning to long meter in bar 16. Threadgill then performs a flute solo on the C and D sections up to bar 28, before returning to the repeating guitar and bass pattern in bar 7. The remaining bars of the A section are played by the entire ensemble before another repeating guitar and bass pattern, this time on the first three bars of the B section. The performance ends with the entire ensemble playing the remaining B section followed by written material of the C and D sections.

A common feature of these arrangements is minimal repetition of written material. In each recording, the opening material is not played again. As Threadgill's written material is often densely contrapuntal and features unusual melodic structures, denying the listener multiple opportunities to hear written material makes distinguishing structure within these pieces extremely difficult. Indeed, the author could not accurately identify written material and improvised sections on early hearings.

This may be an intentional aspect of Threadgill's concept for Zooid. As discussed in the following sections, many of the techniques employed in this music add significantly to its ambiguity. This music is perhaps not meant to be heard as an agglomeration of recognisable and definable structures and devices but rather felt and experienced as an organic whole. Fischlin's interview with Threadgill contains an exchange explaining the way Threadgill hopes people will experience his music.

> Fischlin: So for people who are coming new to your music, what do you think they have to know?
> Threadgill: Nothing.
> Fischlin: Nothing?
> Threadgill: Nothing. I don't believe you have to know anything about art. Some people won't be able to engage with it. That's just a reality in terms of any kind of art anywhere. They always say that art is universal. Art is really not universal. What they mean by universal is that all societies and groups make art. That's what's really universal, but an audience can't always engage with certain things. It's just not within its parameters to do that, you know. But I really don't believe in ever telling people anything. I had one experience in high school with a literature teacher and a girl. And we had to write poetry. The girl came up in front of the class and she said, "This poem is about so-and-so, so-and-so . . ." and he said, "Stop." He said, "Just read the poem. Don't tell us what it's about." And I mean, people say to try to explain things to other people about art. It doesn't work . . . that's not the way it works. I don't really believe in that. And then you get people sitting up with things in their head that they think should occur, rather than just letting people go with the flow. Yet I've found that people from all over the world can engage with your music and art because we travel all over the world and it's certainly not just something that people in North America can appreciate, but people in all kinds of places. (Fischlin 2011, 8-9)

An unattributed poem likely authored by Threadgill, included in the liner notes for the

Zooid album *Tomorrow Sunny/The Revelry, Spp*, reiterates this sentiment.

> I'm trying to take a long view
> within reason
> about the music
> I cannot tell
> or say
> anything
> about the music
> no expectations suggested
> … the individual listener
> let the music
> is all I can offer (2012)

For the author, one of the important and attractive aspects of Zooid's music is its sense of mystery, which is greatly enhanced by Threadgill's form modulations. The application of this technique will be further explored in the following chapter.

Harmony

> *Generally with major/minor music, people play some kind of melody at some point, and then they have this harmony that's the basis of it that they improvise on, and they do all these different extensions and manipulations of this harmony, and you're quite sure what you're listening to at that time. Because it's like this one thing, then it's this other thing [*Laughs*], you know? It's this melody that they play, with a limited harmonic language up on it, and then it changes and opens up and the language gets more complicated harmonically sometimes, in terms of the person that's improvising. But the harmonies that we're playing, they're not major/minor harmonies. They're not thirds and things, so you're not sure what you're listening to. All you know is you hear a harmony in my music, but you can't really find it. - Threadgill (Shteamer*

2010b)

As with Threadgill's approach to form, identifying harmony in Zooid is similarly elusive. The contrapuntal nature of this music displaces any sense of vertical harmony. Harmonic structures are spread between the instruments of the ensemble, while durations of chords often vary between written material and solo sections. In addition to this, Threadgill has developed an approach to harmony divergent from that of the majority of jazz practice.

As was the case in developing an understanding of Threadgill's use of form, many sources contributed to comprehending this harmonic system. Early examination suggested harmonic organisation was present in this music but this was not easily determined even after transcriptions were produced for more detailed analysis. Previous Threadgill collaborator Brandon Ross provided preliminary information regarding Threadgill's harmonic approach. Ross had contact with Threadgill's harmonic system at its genesis. As a member of Threadgill's Make A Move ensemble, Ross encountered this system in some of Threadgill's music written for Make A Move's last recording, *Every Mouth's A Book*.

> So the first records that Henry did where he's using the interval concept in a clearly structured and compositional way was the first Zooid record and the last Make A Move record, so the first ones to appear on Pi Recordings. And the track is, I think the first track on the Make A Move record is Platinum Inside Straight. So this is where you have harmonic structures that can all be moved by that interval set. (interview 10 July 2015)

A recording of Ross's workshop at the 2011 Banff International Workshop in Jazz

and Creative Music provided his description of Threadgill's harmonic system. Ross explained that the system is based around three-note groupings and a process of generating new groupings by inverting pitches by the intervals contained in each group.

The use of the term "inversion" needs to be clearly defined here. In tonal harmony, inversion refers to the rearrangement of a chord. For instance, a triad can be inverted to produce 1st and 2nd inversion chords. In this situation the three notes of the triad are preserved. Threadgill's inversion process produces new notes by inverting the intervals between the notes. Ross states, "Henry's 'system' opens into a kind of focused pan-tonality, ordered and open, and moment-to-moment/instance-to-instance harmonic and melodic presences" (email correspondence 8 July 2017).

Ross's workshop provides an example of Threadgill's inversion process using the pitches C, E and G as an initial three-note grouping. While these notes can be seen as C major triad in traditional harmony, it is the intervals between the notes that are the focus here. In this grouping, there are three intervals: a minor 3rd between E and G, a major 3rd between C and E, and a perfect 5th between C and G. Each interval is inverted around either the upper or lower pitch to produce new three-note groupings. For example, by inverting the interval between E and G, a minor 3rd, the E, a minor 3rd below G, moves to an B-flat, a minor 3rd above G, to generate a grouping of C, G and B-flat. The same interval between E and G can be inverted in the opposite direction, so that the G, a minor 3rd above the E, moves to a C-sharp, a minor 3rd below E, generating a grouping of C, C-sharp and E. This process is continued, inverting each interval in both directions, until six new three-note groupings have

been formed. The intervals contained in the initial and subsequent groupings are then used to form an interval set, this set includes a minor 2nd, minor 3rd, major 3rd, perfect 5th, minor 7th and a major 7th. This process is also displayed graphically in more detail in Figure 5.

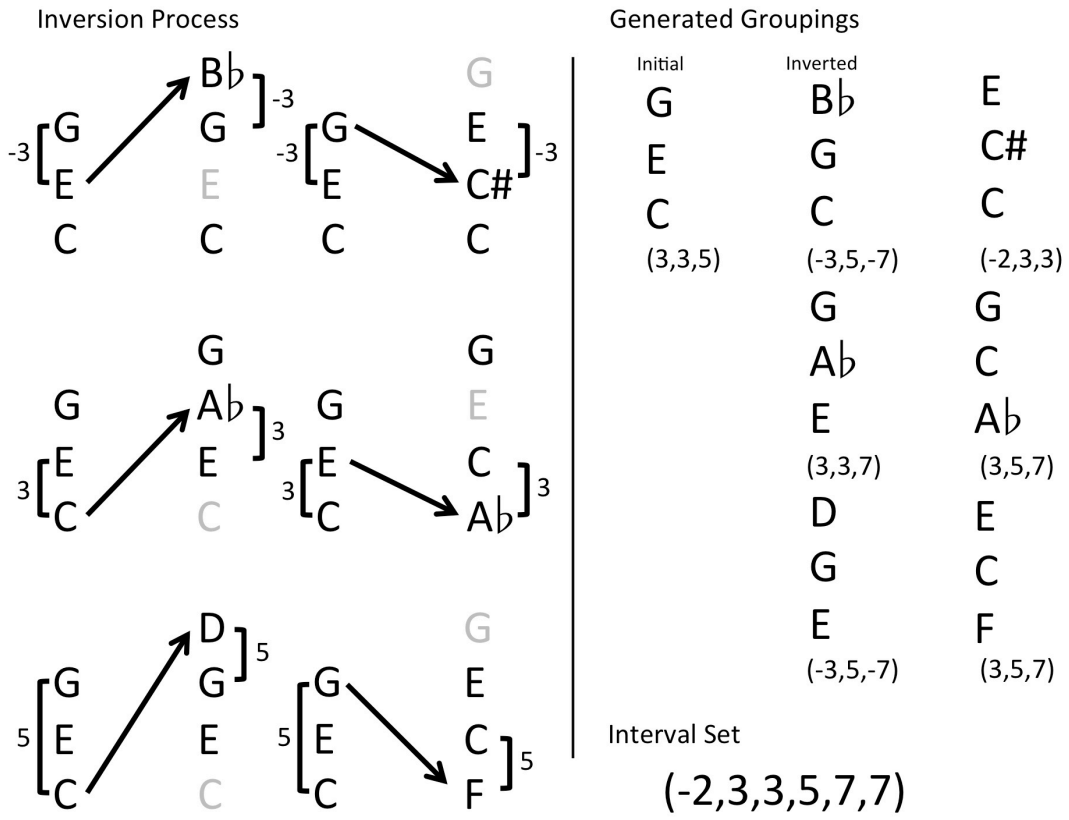


Figure 5 - Representation of Brandon Ross's explanation of Threadgill's interval generation process

Ross's workshop confirms there is a defined harmonic system at work in Zooid. This concurs with Threadgill and Ellman's comments in interviews who both mention aspects of this system. Threadgill himself mentions the importance of the interval set and how it functions in the ensemble,

> Well, the language…is such that we move from one series of intervals to another series of intervals throughout a piece of music. So let's say the first series has five intervals in it, the next has seven intervals in it, the next has three, … on and on like that. And those intervals are what control everything at that time. They control the voice leading and everything: The harmony, the voice leading, the melodic line, everything is moving not necessarily with every one of those intervals being used, but that pool of intervals, and improvisation is coming from there also. (Shteamer 2010b)

Similar descriptions appear in other Threadgill interviews, but he does not elaborate further. At a later date, Ellman discussed Threadgill's reticence to define his musical approach.

> Well, that's why I try to say people ask a lot about it and Henry's been more and more shy about it because he doesn't feel like it serves people to delve too far into that. Because like I said, I think it is useful for people to study it just from a purely curious perspective, because it's not going to help somebody sound more like themselves to study his system. (interview 11 July 2015)

Ellman's statement implies that any study of Threadgill's music needs to be approached with the right spirit. As previously mentioned, if this project is to benefit the author's creative practice, any application of Threadgill's concepts should try to avoid mere reproduction and seek a truly creative response.

From Ross's explanation, a number of things can be determined: Threadgill's harmonic structures are built around three-note groupings, there are sets of intervals related to note groupings, and intervals sets are derived from a process of inverting the intervals in a three-note grouping. What is not clear is the way this system functions within Threadgill's compositions and in Zooid performances. This became

more apparent when Ellman and Hoffman supplied examples of their sheet music for Zooid.

The guitar and cello parts supplied for this project were facsimiles of Threadgill's hand written sheet music that he produces for each member of Zooid. Hoffman's *After Some Time* part has been partially recreated in Figure 6, displaying the notation that facilitates Threadgill's harmonic system in Zooid. Hoffman described how this notation works in ensemble.

> If you look at a chart, what you'll get is there'll be some written material, like a line, a written line. And then there'll be what you're talking about which is a bass, alto, tenor voice, right. Then there'll be the intervals and then there'll be a number of beats that each block of voices gets within the measure. You know, because the measure may be broken up by a couple of different sets of chords if you want to call those chords. (interview 9 July 2015)

The cello music is written in double staves with the upper stave containing notated written material and the lower stave reserved for Threadgill's harmonic notation. Interval sets appear in brackets between the two staves with each number referring to an interval contained in the set. Each interval is considered to be major or perfect unless accompanied a minus symbol (-) indicating a minor interval, or a plus symbol (+) indicating an augmented interval. Further, double intervals indicate both major and minor intervals, or in the case of double fours, both perfect and augmented intervals. For example, the interval set for bar 1 in Figure 6, (-233446), contains a minor 2^{nd}, minor 3^{rd}, major 3^{rd}, perfect 4^{th}, augmented 4^{th} and a major 6^{th}.

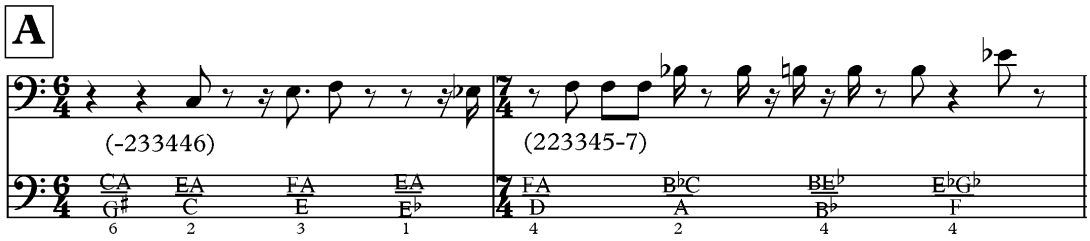


Figure 6 - Author's depiction of Hoffman's cello part to *After Some Time*, bar 1-2

The first two bars of *After Some Time* show a progression of three-note groupings. Each grouping is written on the lower stave as three letters, one beneath a dividing line and two upper letters. The position of each note in this notation indicates its orientation in the harmonic structure: the lower pitch is the bass of the note grouping, the top left and right are the middle and upper voices respectively.

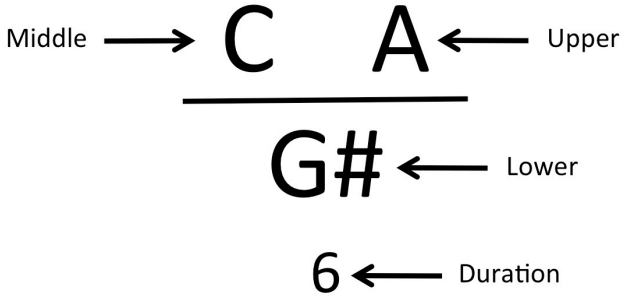


Figure 7 - Harmony notation

For example, in the first note grouping G-sharp is the bass, C is the middle and A is the upper voice as shown in Figure 7. Additionally, each note grouping is accompanied by a number written directly below indicating duration. In the case of the first note grouping the number is six, indicating this harmony lasts for six quavers or half of the 6/4 bar. The harmonic material written on the lower stave is particularly important when improvising. As described previously, the harmonic material of a

piece is the basis for improvisation in Zooid with Threadgill selecting and modifying sections as forms for the various solos. Hoffman explained that the durations for each note grouping are significant in this practice.

> So then, there'll be a couple of different sections of written material which will have all that information with it, and all of the written material is derived from those voices and those intervals. And then the numbers for the rhythm, that's expandable. So, if you have a bar of 5/4 and you have this chord for three beats and this chord for two beats, often times when we're taking solos, not all the time but a lot of the time, three beats becomes six beats and two beats becomes four beats. So the measures basically expand. (interview 9 July 2015)

Taylor's research both confirms and expands upon the explanations of Ross, Ellman and Hoffman. He refers to Threadgill's harmonic approach as an intervallic language and uses some terminology not mentioned by Ross, Ellman or Hoffman. Possibly through Threadgill himself, Taylor has gained access to a copy of a complete score and separate guitar part of the Zooid composition, *See The Blackbird Now*. Significantly, this score varies from that of Ellman and Hoffman's guitar and cello parts and does not include the harmonic notation described earlier. Instead boxed three-note groupings accompanying each interval set are included, described by Taylor as "master cells." In his description, these master cells are used as the initial three-note grouping in Threadgill's inversion process to produce "sister cells." Taylor states, "each master cell can mutate and produce other sister cells that contain some of the same intervallic material" (2015, 32). The terminology used in Taylor's study differs to that of Ross. To avoid confusion, the terms used by Taylor will be used in the remainder of this project. "Master cell" refers to the initial three-note grouping

and “sister cell” refers to the generated three-note groupings.

Taylor elaborates further on Threadgill’s harmonic approach. In the following statement he makes a connection between the master cells written on the score of *See The Blackbird Now* and the harmony written in the separate guitar part.

> With each master cell, Threadgill can produce 6 sister cells which are considered to be part of the same family and can be interchanged with one another. All the harmony comes from these related cells. (2015, 36)

Taylor substantiates this connection by comparing the master cell in bar 4 of the score to the harmony in bar 4 of the guitar part using Threadgill’s inversion process.

> Using Threadgill’s operation, the master cell E, F, A, produces the sister cells (E A C#), (E Db F), (F F# A), (D# E A), (F A D), and (B E F). For this measure, Threadgill chooses to use the 4th and 6th sister cells as the harmony. (2015, 40)

In the previous two statements Taylor asserts that the harmonic notation in the individual instrument parts is drawn from the master cell written in the score and the generated sister cells produced in Threadgill’s inversion process. However, analysis of the three pieces included in this project shows that there may be a more complex relationship between the master cell and the harmony in this music.

Determining the correlation between master cells and harmony in the Zooid pieces chosen for this project was not straightforward. As Threadgill’s scores were not available, the only reference for this, other than the author’s transcriptions, came from

guitar and cello parts supplied by Ellman and Hoffman. These parts do not include the master cell information seen in the score for *See The Blackbird Now*, so a system was devised to generate a hypothetical master cell derived instead from the interval sets written in the parts. As previously noted, there is a clear relationship between the master cell and interval set. Once the inversion process has been performed, the intervals contained in the master and sister cells generate the interval set. The process for generating hypothetical master cells involved creating a compendium using Threadgill's inversion process for every possible three-note grouping within an octave that would detail each master cell and interval set relationship. The interval sets produced in this compendium could then be cross-referenced to those that appear in the guitar and cello parts, indicating a potential master cell that may have been used in Threadgill's original score. In the compendium, each master cell was built upon the note C, to streamline the process and allow for transposition if necessary. This process also allowed a closer examination of the relationship between the sister cells produced in the inversion process and the three-note groupings that appear in the harmonic notation of the guitar and cello parts.

To aid in this analysis, hypothetical versions of the written material scores used in Zooid were created from the written material sections ascertained in transcriptions[10]. The following analysis included in this and the follow section, Melodic Conception, takes examples from these hypothetical scores. Passages that included multiple three-note groupings within one interval set were selected for harmonic analysis from the three written material scores as well as the *See The Blackbird Now* scores included by Taylor. The analysis from these sources revealed a different master cell/harmony

[10] Written material scores for each transcribed piece are included in full in Appendix 1.

relationship to that described by Taylor. The following analysis uses square brackets to denote master cells, eg. [A B C], and curved brackets to denote sister cells and harmony contained in the individual instrument parts, eg. (A B C).

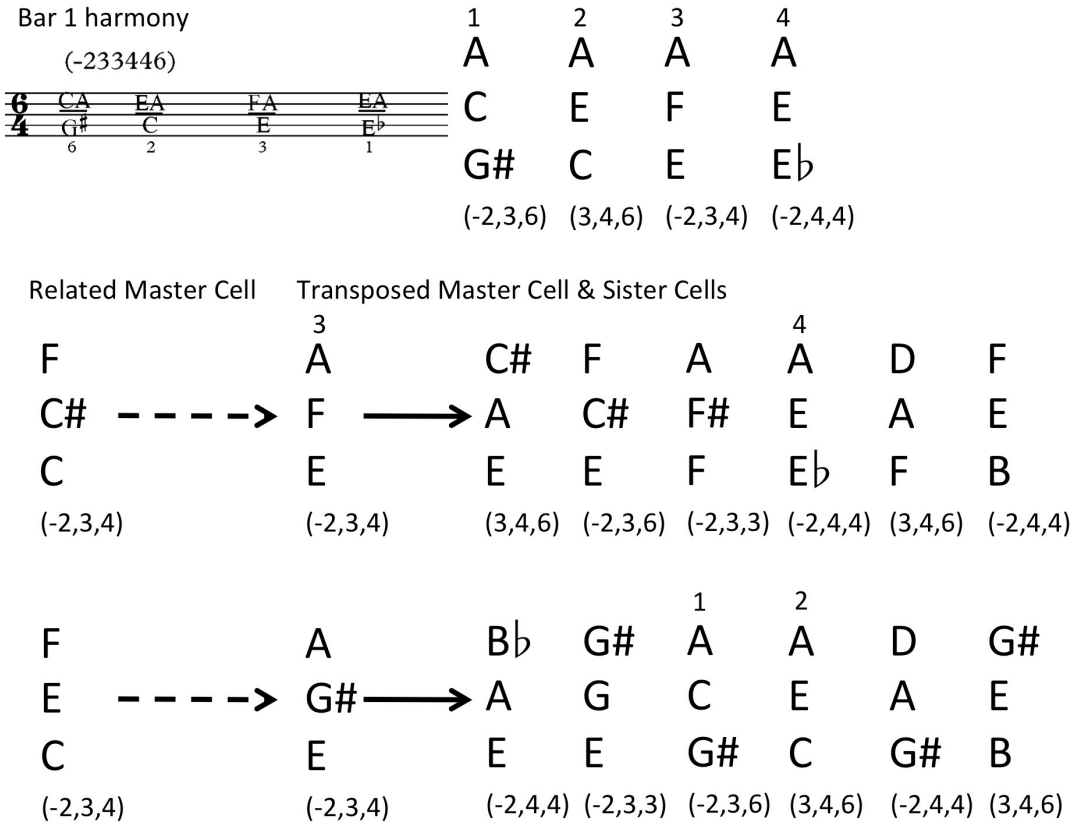


Figure 8 - *After Some Time*, bar 1: harmony and interval set/master cell comparison

Bar 1 of the cello part of *After Some Time* contains the interval set (-233446) and harmony of four three-note groupings: (G# C A), (C E A), (E F A) and (E♭ E A). The interval set relates to two master cells in the compendium [C C# F] and [C E F]. Transposing these master cells shows that the harmony in bar 1 is contained in the sister cells. Transposing [C E F] to [E G# A] gives the first and second harmony, (G# C A) and (C E A), as sister cells, while transposing [C C# F] to [E F A] gives the third harmony, (E F A), as the master cell and the fourth, (E♭ E A), as a sister cell.

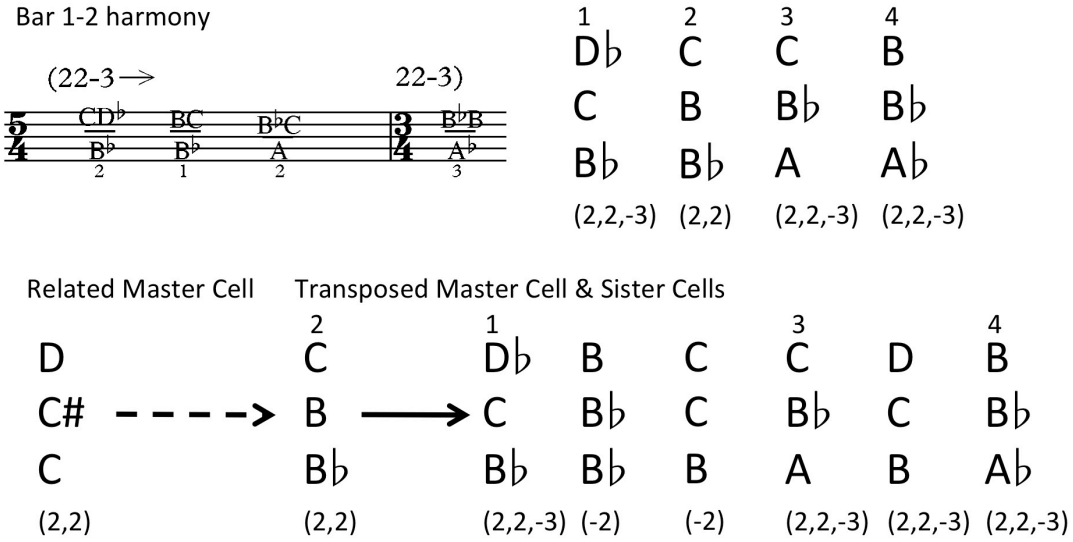


Figure 9 - *Polymorph* bar 1-2: harmony and interval set/master cell comparison

Bar 1 and 2 of the cello part of *Polymorph* both contain the interval set (22-3) and four harmony groups: (B♭ C D♭), (B♭ B C), (A B♭ C) and (A♭ B♭ B). The interval set relates to one master cell [C C# D] that can be transposed to produce the second harmony as a master cell [B♭ B C]. The remaining three harmonies, (B♭ C D♭), (A B♭ C) and (A♭ B♭ B), are all resulting sister cells.

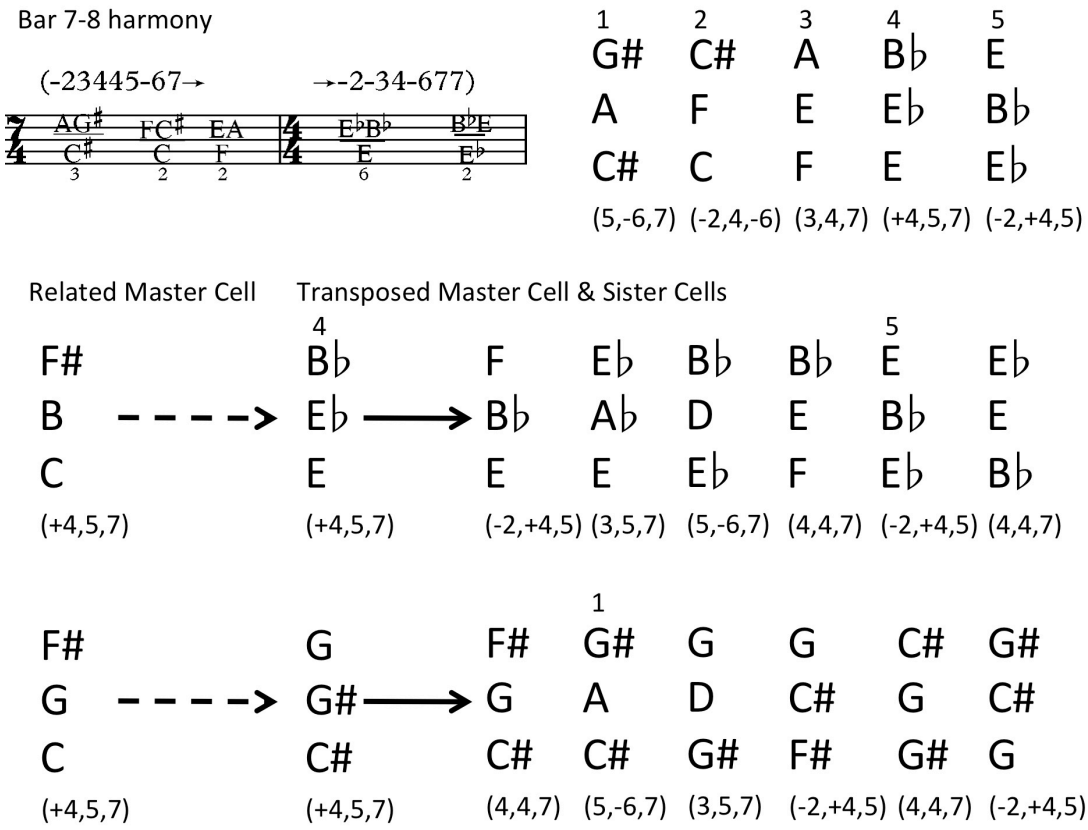


Figure 10 - *To Undertake My Corners Open* bar 7-8: harmony and interval set/master cell comparison

Bar 7 and 8 of the guitar part of *To Undertake My Corners Open* contain the interval set (-23445-67) and five harmony groups: (C# A G#), (C F C#), (F E A), (E E♭ B♭) and (E♭ B♭ B). The interval set relates to two master cells [C B F#] and [C G F#] that can be transposed to produce the first, fourth and fifth harmonies. [C B F#] can be transposed as the fourth harmony, [E E♭ B♭], giving the fifth harmony, (E♭ B♭ B), as a sister cell, while [C G F#] can be transposed to [C# G# G] giving a sister cell of the first harmony, (C# A G#). Interestingly, the second and third harmonies cannot be found in any transposition of both master cells and their generated sister cells. These harmonies, (C F C#) and (F E A), can be linked to their related interval set, the intervallic relationships present in each harmony are consistent with the interval set.

Of these three examples, only the *Polymorph* excerpt satisfies Taylor's master cell/harmony relationship. The harmony in bar 1 and 2 of *Polymorph* can be generated through the inversion process of a single master cell. In the other two examples, it was necessary to use multiple master cells related to the interval set to produce the harmony present, and in the case of *To Undertake My Corners Open*, some harmony could not be produced using this practice. Despite this, another correlation can be seen in the harmony of all three excerpts; the intervallic relationships within each three-note grouping are consistent with the associated interval set.

It should be stated here that this and the remaining analysis in this chapter has not been confirmed by Threadgill and should be considered theoretical. However, the previous examples point to a nuanced relationship involving the master and sister cells, the derived interval sets and the harmony that occurs in the instrument parts. As previously mentioned, Threadgill says intervals control the voice leading in Zooid pieces. He elaborates, "Every movement is according to the numbers … Otherwise you break the bonding that causes the whole thing to fit the nuclei of the intervallic series" (Chinen 2009). It is suggested that the harmony in Zooid pieces is not drawn only from master and sister cells of the intervallic process but instead uses interval sets to govern harmonic structures, allowing a greater range of harmonic possibilities and wider sense of coherence. As previously shown, master and sister cells do appear in Zooid harmony. However, given there are many instances where the harmony varies from using this material, it is logical to conclude that the interval sets act as an overarching organising element for harmony in Zooid.

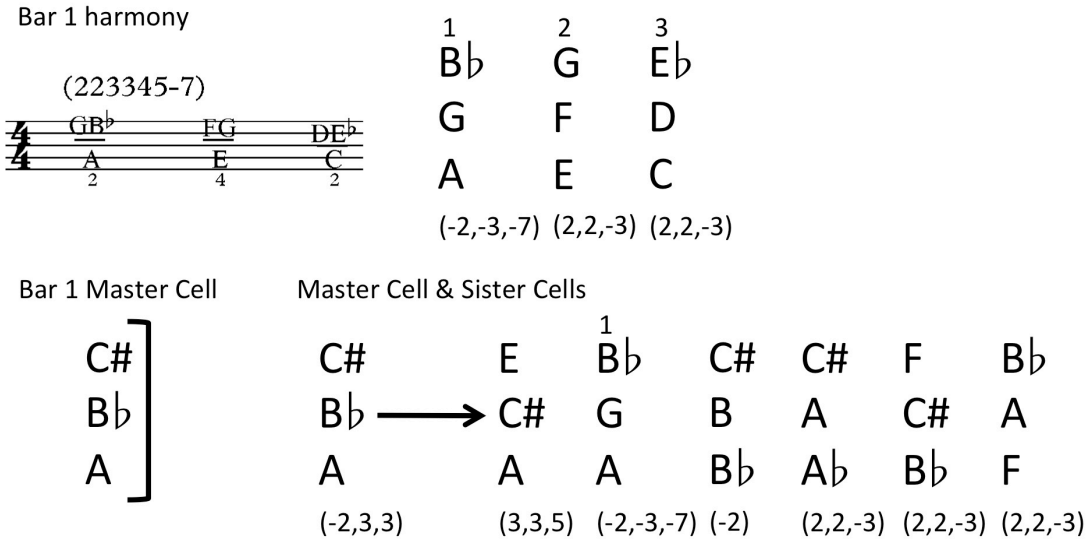


Figure 11 - *See The Blackbird Now* bar 1: harmony and master cell comparison

Further evidence of this can also be seen in *See The Blackbird Now* (Taylor 2015, 23-25). As previously stated, the master cell for each interval set appears in the score, allowing a clearer indication of its relationship to the harmony. Bar 1 of the guitar part of *See The Blackbird Now* contain the interval set (223345-7) and three harmony groups: (A G B♭), (E F G) and (C E E♭), as shown in Figure 11. The master cell written in the score is [A B♭ C#] and only gives a sister cell of the first harmony, (A G B♭). The remaining harmonies, (E F G) and (C E E♭), contain intervallic relationships consistent with the interval set. Bar 2 of the guitar part of *See The Blackbird Now* contain the interval set (-2334466) and four harmony groups: (F A♭ D ♭), (D B F), (B♭ D# E) and (C E D♭), as shown in Figure 12. The master cell written in the score is [F# B G] and has none of the harmony occurring as sister cells, while each harmony remains intervallically consistent with the interval set.

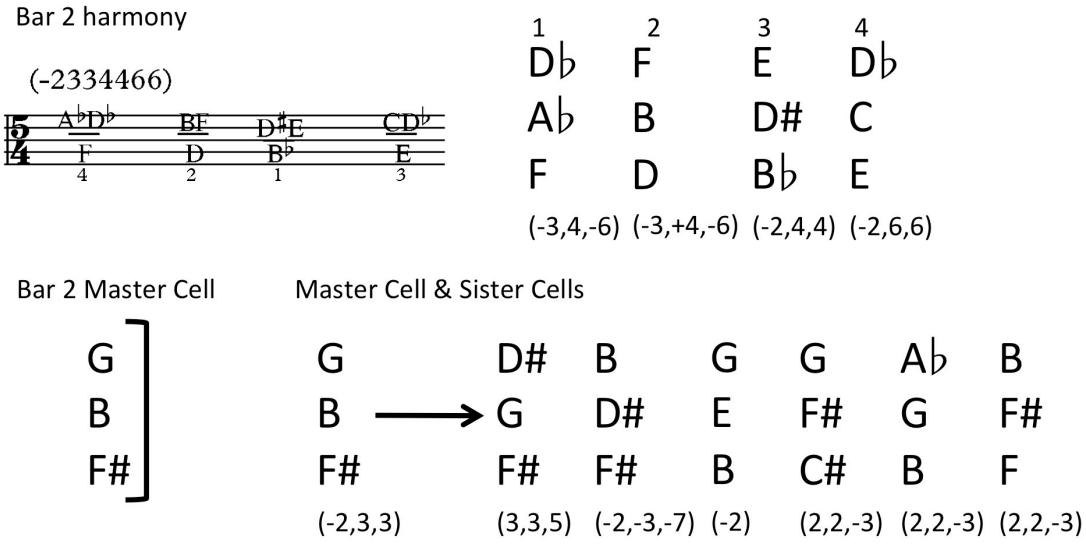


Figure 12 - *See The Blackbird Now* bar 2: harmony and master cell comparison

These examples confirm the significance of the interval set in relation to harmony. Further, Taylor's assertion that all of the harmony is derived from the master and sister cells is not evident; bar 1 contains just one harmony group in common with the master and sister cells, while bar 2 includes none. Threadgill reiterates his intervallic approach to harmony,

> They control the voice leading and everything: The harmony, the voice leading, the melodic line, everything is moving not necessarily with every one of those intervals being used, but that pool of intervals. (Shteamer 2010b)

The extent of this intervallic control became more apparent in conversation with Davila. He stated that,

> The way each instrument moves is directed by the interval set and when you take the three accompanying parts, the guitar, cello and tuba, the way these parts move together makes the harmony. (interview 17 December 2015)

This statement gives significant insight into Threadgill's composing as it further explains the functioning of the intervallic system in relation to the notated harmony. The intervallic movement Davila describes can be seen in the transcribed excerpt of the written material of *After Some Time* in Figure 13. The interval numbers written above each stave all correspond to the bracketed interval set for each bar. One exception is the final interval of the alto saxophone, which could either be attributed to transcription error or as a deliberate departure in performance.

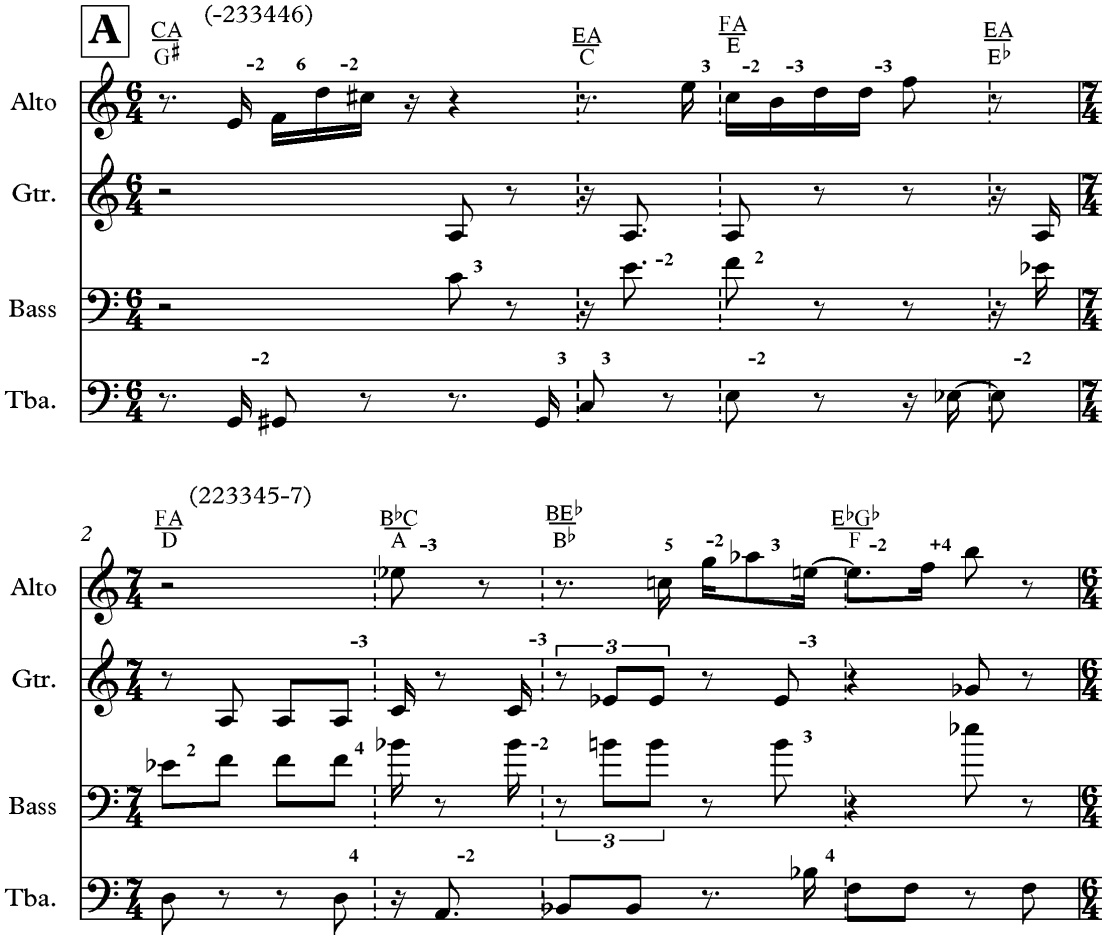


Figure 13 - *After Some Time* bar 1-2: intervallic analysis

Figure 14 confirms Davila's comments regarding the relationship between the notated harmony and the three accompanying parts. Boxes have been added to the excerpt from *After Some Time* grouping the three voices that make up the harmony in each

bar. For example, the first harmony is (G# C A) which corresponds to the first box containing G# in the tuba, C in the bass guitar, and A in the guitar. The remaining boxes correspond similarly to their respective harmony.

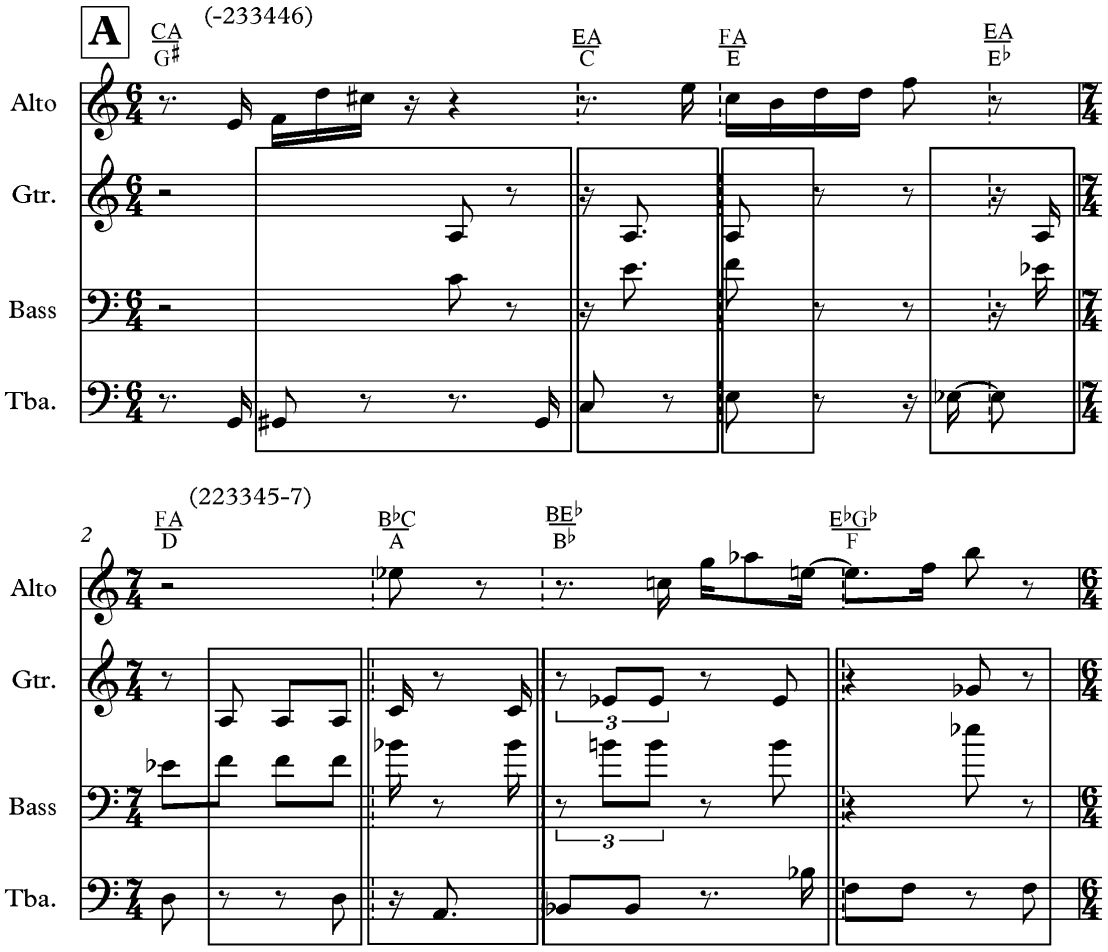


Figure 14 - *After Some Time* bar 1-2: accompany part and harmony relationship

In summary, there are a number of practices that have been determined that make up Threadgill's harmonic approach. Initially, the intervallic process is performed using a master cell. The generated interval set determines the intervallic movement of each voice. In turn, the three accompanying parts generate the harmony. Importantly, each three-note grouping may or may not resemble those generated in the intervallic process.

Importantly, this intervallic approach is maintained during improvisation. When improvising, the soloist and accompanying players use the interval set to construct lines and depart from the harmony. Threadgill explains,

> The written music that's on the paper, everything is moving according to [the interval set]. Not necessarily every interval that is up there, but when we improvise, we can take a lot of liberties because that is what the musicians have learned how to do. (Iverson 2011b)

For Ellman, more liberties are taken as a soloist than an accompanying player, where the interval set must be taken into account when moving between chords.

> When we're moving from one chord to the next, we absolutely have to move using the intervals on the page. So say that you had an interval of a minor second, and one chord was a D and I was going to move from a D to an E-flat. If I go up to the E-flat, it's a half step, but if I go down to the E-flat, then we're going down, what, a seventh? But if there's no seventh in the interval set, that would be an illegal motion. So it's the same pitch but I'd be breaking the rules of the counterpoint. When you're comping, that's really, really important. (Chinen 2011)

> Once you get into the solo, it's not as strict. But, you're far better off if you use those interval sets to inform your melodic choices, more so than anything else. Because if you try to play any kind of mode or licks or anything like that it just sounds real corny. It doesn't fit, it's like a different kind of music. So you have to sort of, I had to really start developing lines that are like minor second, minor third, major second, sharp four, major seven! "Oh, that's interesting." You come up with [a] different kind of language. (interview with Ellman 11 July 2015)

Ellman's comments point to the level of flexibility that has developed in Threadgill's intervallic system. While he is referring to liberties taken when soloing, there are degrees of flexibility present in all components of this system. While the intervallic process is a formulaic procedure producing just six three-note groupings, Threadgill focuses on the intervallic material generated in this process, using this as the basis for voice leading and harmony when composing, allowing far more possible harmonic groupings than the original six sister cells. The notation for this harmony is also flexible by design; writing each note of a harmony means any possible three-note grouping can be represented and clearly communicated to the player. Lastly, as Ellman states, harmony is treated in a flexible way when improvising. With awareness of the system, players are free to deviate from the confines of interval sets and harmonic progressions, making artistic value judgments in the moment of performance. This flexibility is key to the dynamic nature of a Zooid performance where Threadgill and the ensemble have created a space for engaged, creative music.

Melodic Conception

> *Every time I moved from one group to the next, my language was changing every time … I never wrote music for the Sextett the way I wrote when I was in Air — I used completely other abilities for what I was doing with melody and form. From Air until Make A Move is all in the range of major-minor, and it broke over into chromaticism … Make a Move was as far as I could go with major-minor music, then I mixed in chromaticism and whatever else I could think of until I got completely over to where I am now, to a complete language that has nothing to do with that. - Threadgill (Mandel 2016b)*

Threadgill's melodic material for Zooid is striking. Angular and rhythmically unique, his melodies contribute heavily to the idiosyncratic nature of this music. As shown in the following examples Threadgill's melodies display a motivic quality; they are made up of short, fragmented statements or motifs. Sometimes these motifs are linked rhythmically or through common intervallic content, while other melodic passages appear unconnected with contrasting motifs.

Analysis concerning the written material of the three transcribed pieces included in this project is problematic. Written material is not easily determined, with three factors making this material unclear in the transcriptions. Firstly, this project differentiates written material from improvised sections by relying on the partial information of the guitar and cello parts provided by Ellman and Hoffman respectively. Secondly, Threadgill's pieces are constantly rearranged and modified from their original forms for new performances, further obscuring the written material. Lastly, even if the structure of a piece can be determined, designating written material sections from solos, there is a strong improvisatory approach in Zooid performances. Consequently, ensemble members deviate with creative license from their written parts. This was evident when comparing the original cello and guitar parts with transcriptions; liberties with performance of the written parts are clearly evident. As such, the analysis presented here cannot be relied upon as wholly representative of Threadgill's original compositions. The result is an approximate picture of Threadgill's written material for these works that nevertheless can still provide an insight into compositional approach. As previously mentioned, these excerpts are taken from the written material scores included in Appendix 1.

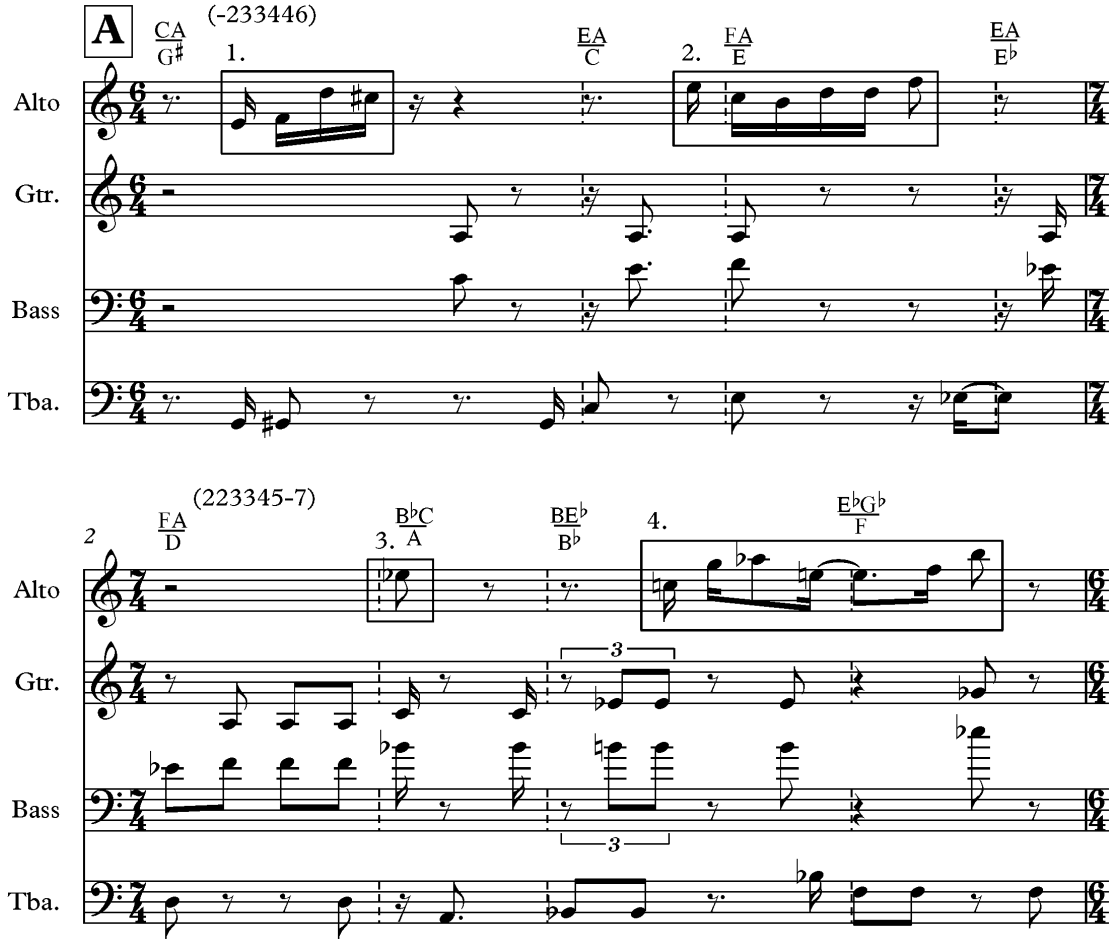


Figure 15 - *After Some Time*: A section unconnected motifs 1 - 4

The motifs contained in Zooid melodies can be irregular, occurring in different positions in the bar and almost interrupting the accompaniment. *After Some Time* provides a clear example of this. The piece is divided into two sections, A and B, with the alto saxophone playing the main melodic line. In the first two bars of the A section, this melody contains four short melodic statements or motifs, as shown in Figure 15. The first begins on the last semiquaver of the first beat of bar 1 and is made up of four semiquavers. The second motif begins on the last semiquaver of beat 4, this time consisting of six semiquavers. The third statement, which might not be considered a motif, consists of one note on beat 3 of the second bar, before the fourth motif is played on the last semiquaver of the fourth beat. The fourth motif is more

rhythmically complex than the previous statements, featuring a variety of different note lengths.

There is little commonality between these four statements; they vary in rhythmic content, length, placement and intervallic structure. While this melody can seem unconnected, unexpected and possibly jarring, it clearly articulates the agitated tone of the section reaching a climax at the final note of the fourth motif. The remaining A section continues in a similar way, using varied motifs to maintain a dynamic and disjointed atmosphere.

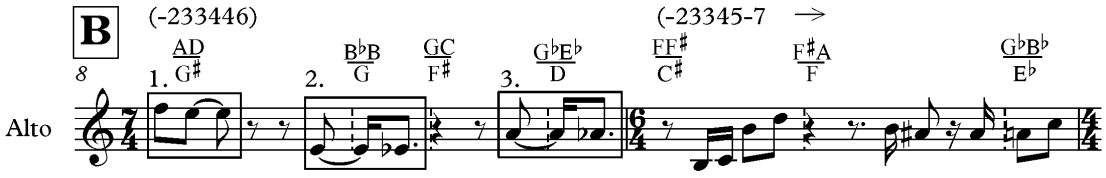


Figure 16 - *After Some Time*: alto saxophone, bar 8 related motifs 1 - 3

This is contrasted in the B section with clearer relationships within the motivic melody. In bar 8, the first bar of the B section, the alto saxophone plays three two-note motifs as shown in Figure 16. These motifs are closely related, both intervallically and rhythmically. Each motif features a descending minor 2nd interval starting with the first motif on beat 1, descending from F to E; the second motif begins on the second quaver of beat 3, descending from E to E-flat; and the third motif is played on the second quaver of beat 6, descending from A to A-flat. The rhythmic content of the three motifs are also similar; the first featuring a quaver and crotchet rhythm starting on-beat, while the remaining motifs are made up of dotted quavers starting off-beat.

The remaining B section features an extended rhythmic development stemming from the first motif of bar 9 and can be seen in Figure 17. This motif starts on the second quaver of beat 1 with a rhythmic pattern of two semiquavers followed by two quavers. This rhythmic device is developed throughout the remaining melody, maintaining various parts of the original pattern. This can be seen in the second motif of bar 9, bar 10, and from the second motif of bar 12 onwards; the motifs here all share rhythmic components, uniting this passage through rhythmic variation.

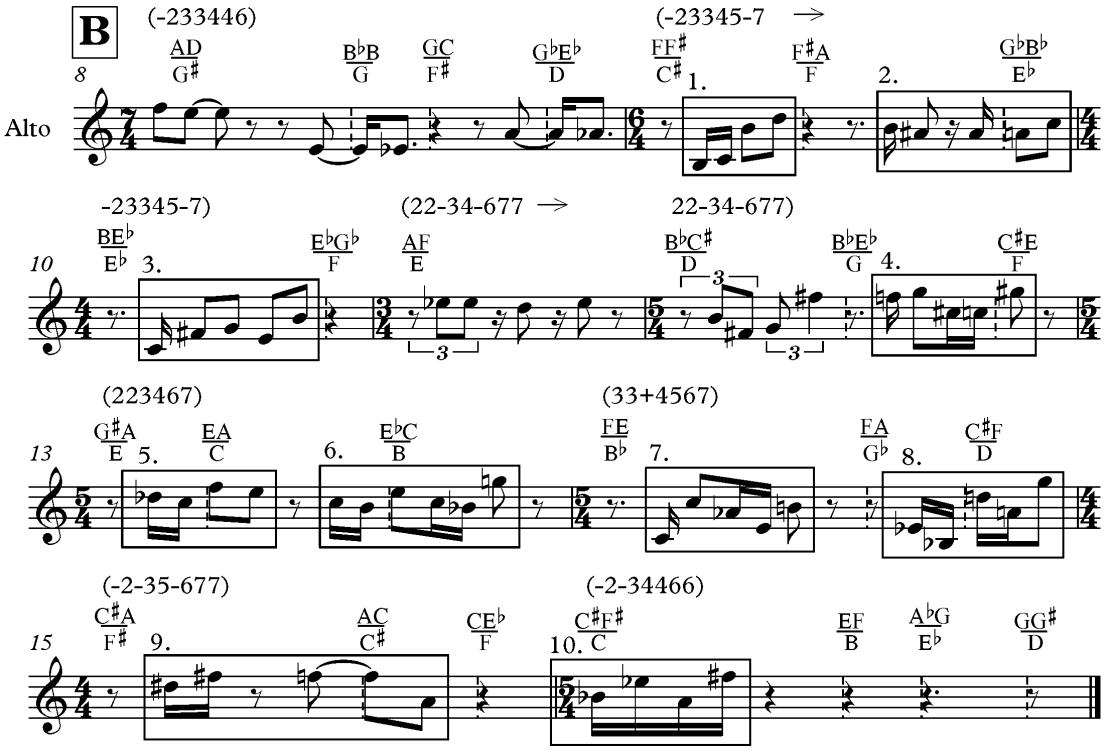


Figure 17 - *After Some Time*: alto saxophone, bar 8 - 16 related motifs 1 - 10

After Some Time displays three types of motivic compositional approaches: the melody develops through either intervallic or rhythmic relationships between motifs, or can be made up of unrelated motifs. There is additional evidence of these approaches in the two other transcribed pieces.

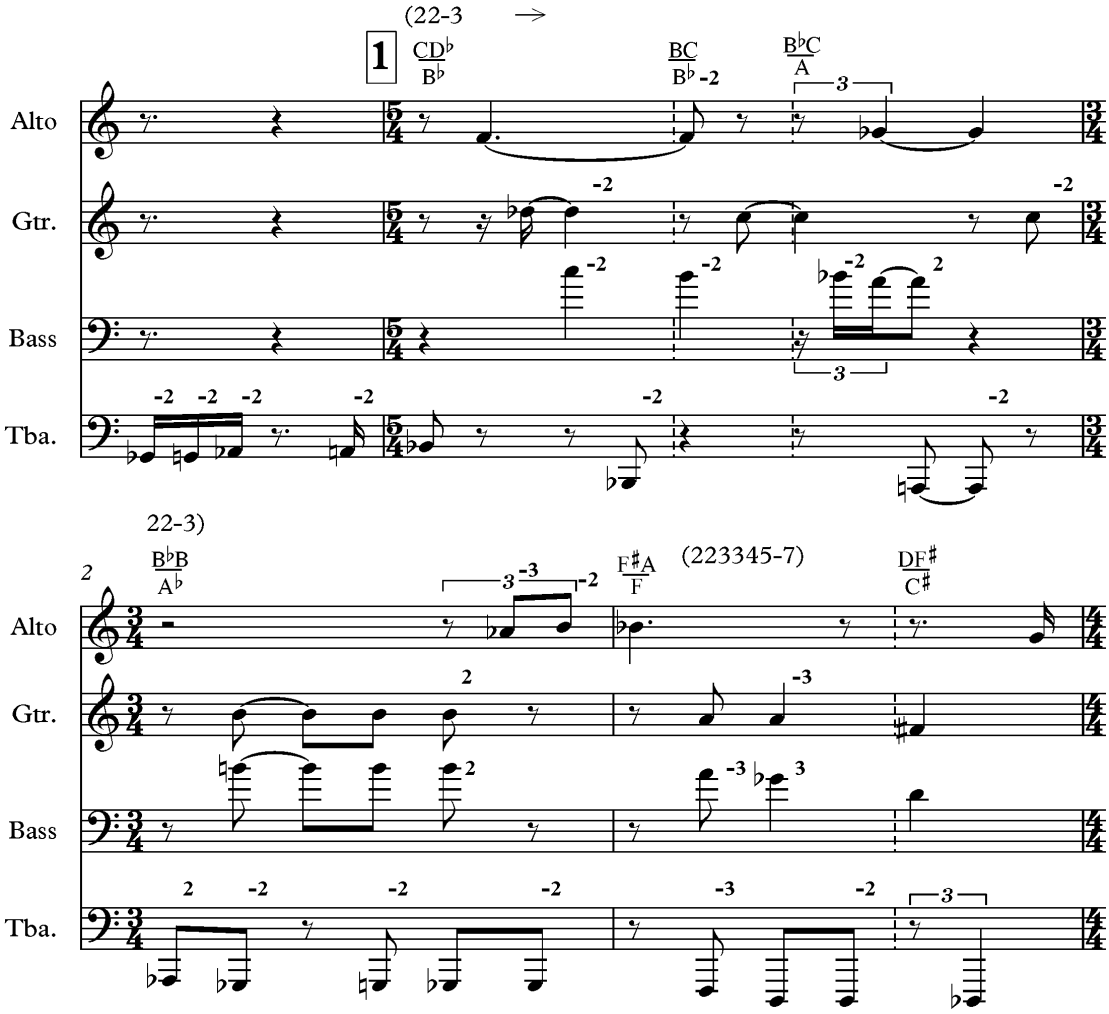


Figure 18 - *Polymorph*: 1 section bar 1-3, restricted intervallic movement

Polymorph has a much more languid feel than *After Some Time*, its tempo is slower and the melody contains more sustained notes. An example of restricted interval composing is found in the first two bars of the written material. Examining the anacrusis and first bar of the composition, we can see Threadgill has limited the movement of not just the melody, but all instruments to an interval of a minor 2nd, as shown in Figure 18. While the interval set contains a minor 2nd, major 2nd and minor 3rd (written as (22-3) on the score), none of the movement in this bar is by more than a semitone, ignoring the octave interval in the tuba. Further, after the initial ascending line of the tuba, only the alto saxophone line continues ascending. The remaining instruments move in descending semitones, in opposition to the melody line and

creating a nearly parallel harmonic movement together. This minor 2nd movement is continued by the guitar and tuba in bar 2, while the alto saxophone introduces an ascending minor 3rd interval at the end of the bar. This is mirrored by the accompanying instruments directly after; in bar 3 the guitar descends by a minor 3rd, the bass descends by a minor 3rd then a major 3rd, and the tuba by a minor 3rd then a semitone. The remaining written material continues with less intervallic restrictions, employing a variety of intervals.

It is not clear if Threadgill actively sought to use restricted intervals in the first three bars of this piece. While his intervallic system certainly restricts movement to a number of intervals (most sets contain five or more intervals), intervallic movement is not frequently limited to this degree. Without confirmation from Threadgill, assumptions about specific compositional process remain theoretical. Not withstanding, the alto saxophone part reveals further evidence of an intervallic melodic approach. Figure 19 shows the entire alto saxophone melody, where starting in bar 5, a major 6th interval is used repeatedly in the melody. The interval occurs ten times, sometimes descending but predominantly ascending, and could be considered a theme of sorts. The intervals that feature in the first three bars, a minor 2nd and a minor 3rd, also reoccur frequently. In one interview, Threadgill explains that the restriction of interval sets gives gravity, or a sense of cohesion to his music.

> All of the material … It's composed of blocks of intervallic blocks. There's a gravitational system that's based on those intervals, that means that everything will hang together there through a force field from the mere fact that this is the only thing in play. (Vimeo 2010)

Taking this logic one step further, the repetition of the three intervals, a minor 2nd, minor 3rd and major 6th, within this melody could be seen as a type of cohesive element, interconnecting the phrases.

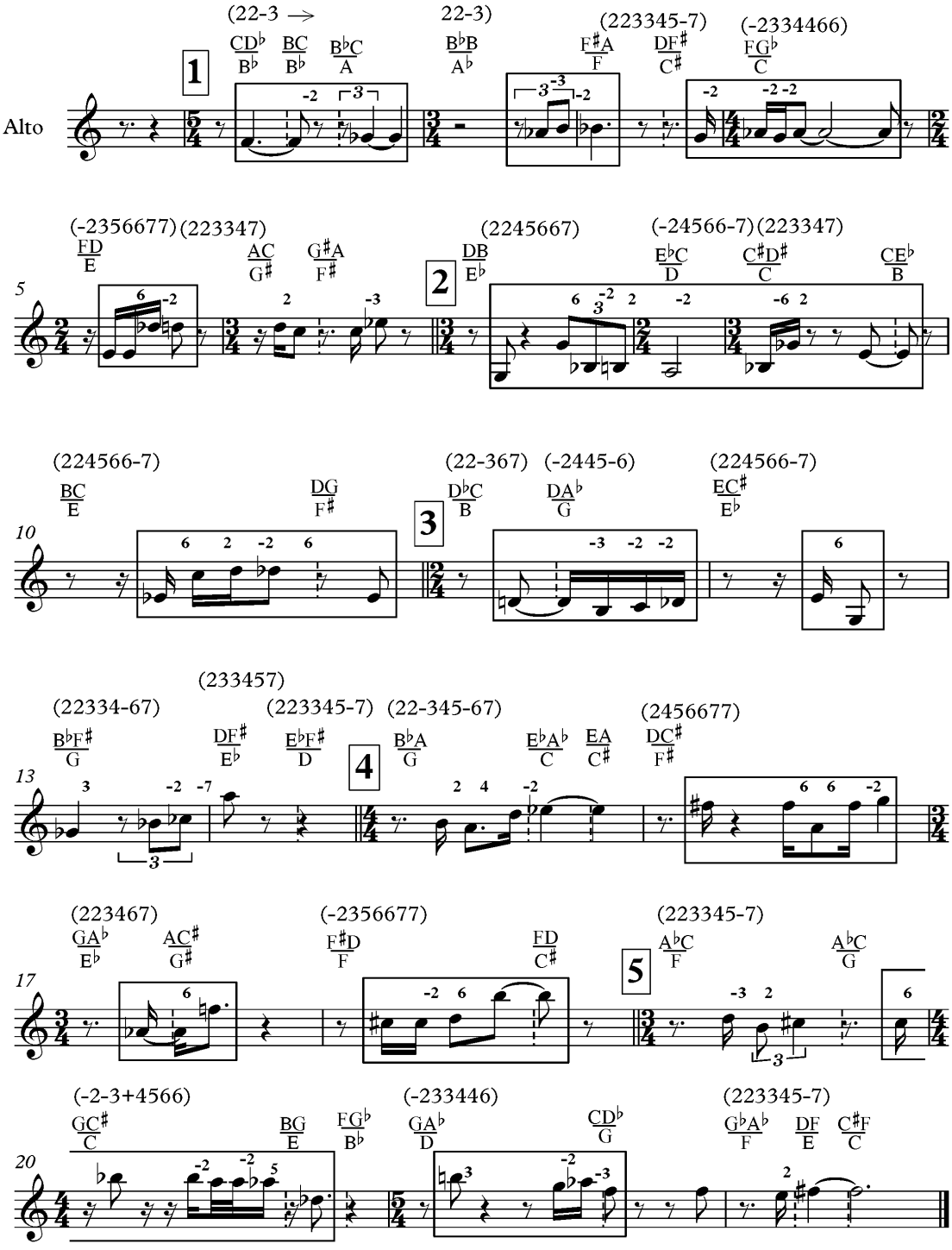


Figure 19 - *Polymorph*: alto saxophone melody, repeated interval use

The presence of interval sets and corresponding interval use in the written material of these pieces suggests Threadgill composes using predetermined interval sets as a guide for his melodies. This process is not a simple procedure of randomly selecting a series of intervals to generate melodies. Rather, the interval set is used to unlock new melodic material and is an organising element giving coherence to the individual voices in these compositions. Ellman discussed this in relation to presentation he gave to student musicians.

> In the end it still has to sound good … someone invited me to go to the New School and talk about Henry's music. And I was trying to explain this interval system and there was some smart-ass kid in the back … one of them said, "So you're saying that if that one has a minor second and a major second in it, then that means you could just play any scale because you could play a major scale, you could play a half-whole diminished scale, you could play an altered scale. They all have collections of semitones and whole tones."… I said, "Yeah, you're right. Technically that's true but that would sound like garbage because, first of all, you have to build some kind of line that works from one chord to the next and there has to be some sort of melodic logic that has to come from your intuition." It's like if you're playing a minor seven chord, you're not just running up and down Dorian mode. That doesn't make any music at all. Technically, you're not wrong but it doesn't sound like music. So, you know you're not completely free because you have so many options here. You know, you still have to use them to your advantage musically. It's like saying in Serialism anything goes. Well, no. This music has a series of notes and you can play it in that order and it's part of the rules of the music that makes it sound the way it does. And Henry's music has its rules too. So you can disregard them but you won't sound good on the music. (interview 11 July 2015)

For Ellman, the intervallic approach gives a specific character to Zooid's music. The use of interval sets allows the music to transcend any semblance of tonality while maintaining intervallic coherence as an organising element.

To Undertake My Corners Open provides a contrast to the other two pieces melodically. In addition to a change in instrumentation, the melodic focus in this work shifts frequently between trombone, flute and guitar. A motivic approach is evident in much of the melodic material and is most obvious in the opening trombone melody. After a short anacrusis, the trombone plays four contrasting motifs over the first six bars, as shown in Figure 20. There is rhythmic variation in each motif; the first spans beat 1 to 4 of bar 1 and consists of crotchet and semiquaver divisions, the second consists of just five consecutive semiquaver notes starting on beat 1 of bar 2, the third motif consisting of triplet quaver divisions starts on the second triplet quaver of bar 3 and is continued until the end of the bar, while the fourth motif spans nearly three bars and is played from the second quaver beat of bar 4 until the fourth quaver beat of bar 6, consisting of a variety of different rhythmic divisions from a semiquaver to a minim. In addition to this, there are no intervallic commonalities between the motifs in this opening melody.

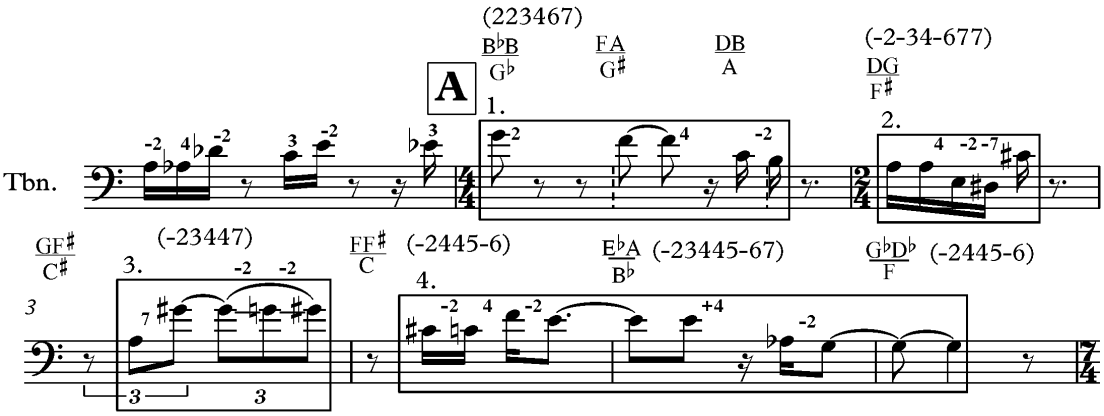


Figure 20 - *To Undertake My Corners Open*, bar 1 - 6: trombone melody, unrelated motifs 1 - 4

This passage is analogous in approach to the unrelated motifs that were contained in *After Some Time*. Each motif here is distinct from the other in length, rhythm and intervallic content, meaning the larger melody does not adhere to any strict overall structure. Despite this, there is a clear difference between the melody here and that of *After Some Time*. Less space is given between the individual motifs in the trombone melody of *To Undertake My Corners Open* than the alto saxophone melody in *After Some Time*. This means that the varied material is more compressed and varying at a greater speed, giving the music a greater sense of urgency. After the initial trombone melody, the written material moves between guitar, flute and trombone melodic focus at various points in the piece. This melodic movement is part of a larger shift in arrangement variation and will be discussed in the following section.

Counterpoint

> *Collective improvisation has been an important thing to me, always. Now everything is truly independent; no one can really depend on anyone else. I like harmony. I haven't abandoned anything. Counterpoint is there, but the harmony is an illusion. You hear this harmony, but we aren't really playing it,*

and we aren't improvising on it. - Threadgill (Iverson 2011b)

Counterpoint is an important part of Threadgill's music for Zooid. The written music for the pitched instruments in the ensemble displays a high level of rhythmic independence between the parts. This occurs to varying degrees, but often each instrument performs a completely separate line that interlocks with the other parts. The result of this is an intricate and complex sound that somehow retains a strong rhythmic feel across the ensemble. Further to this, counterpoint is retained in the improvised sections of the pieces. The group has developed a performance method that allows the soloist and accompanying players to improvise independent parts around each other, mirroring the counterpoint of Threadgill's written material. This section will examine examples of counterpoint from both the written material and improvised passages.

It is worth noting again that the drum parts for Zooid, performed by Elliot Kavee, have not been included in this study. While the drums form an invaluable part of the sound of this music, underpinning and providing yet another level of rhythmic counterpoint to this group, their contribution is beyond the scope of this research.

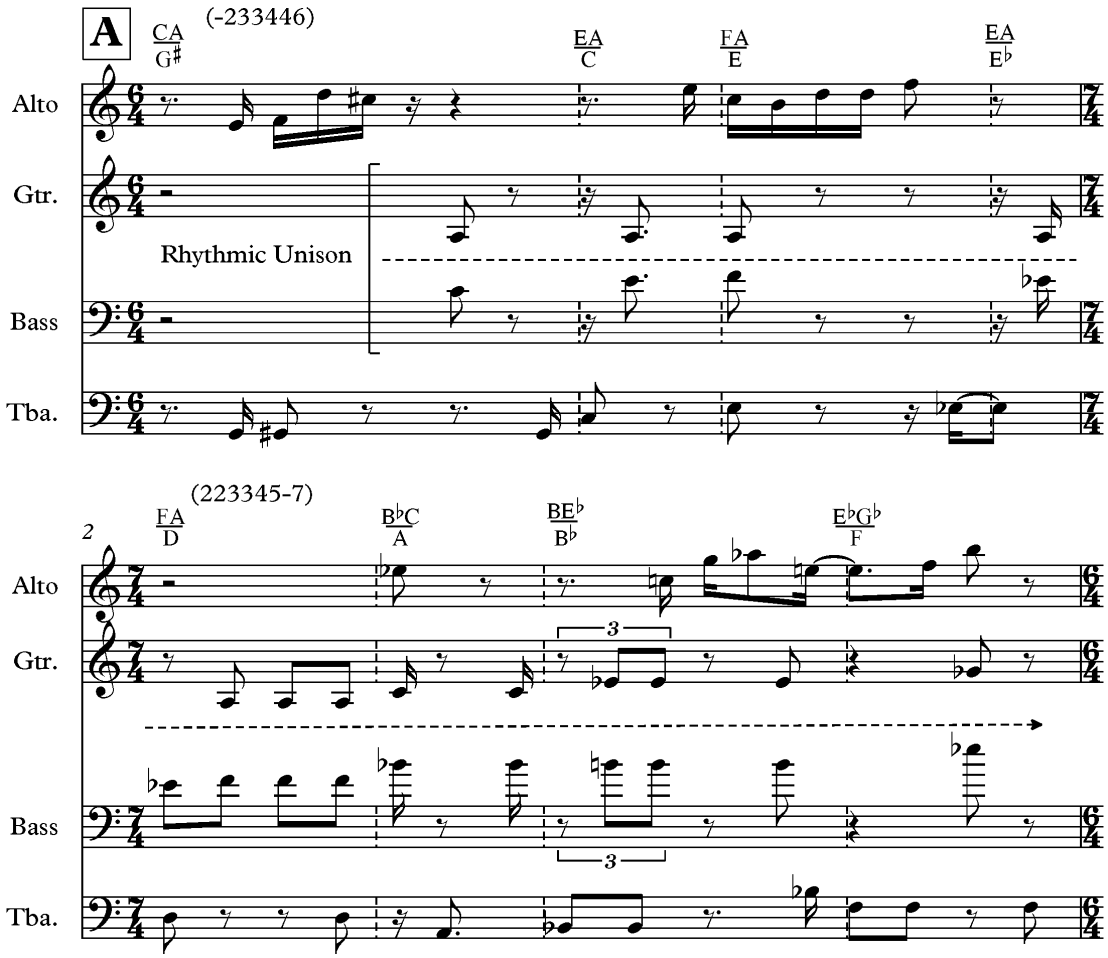


Figure 21 - *After Some Time*, bar 1 - 2: guitar/bass rhythmic unison

Threadgill's written material for *After Some Time* demonstrates the way he uses counterpoint in composition. Shown in Figure 21, the written material begins with an alto saxophone melody with counterpoint accompaniment from the guitar, bass guitar and tuba. The guitar and bass guitar are in rhythmic unison during the entire A section. The B section, starting at bar 8, sees the guitar and bass guitar play independent parts underneath the continuing alto saxophone melody, as shown in Figure 22. This results in full counterpoint within the ensemble and an expansion of rhythmic complexity. The written material returns to rhythmic unison between guitar and bass guitar in bars 11 and 12, before again shifting to full counterpoint in the last four bars of the written material.

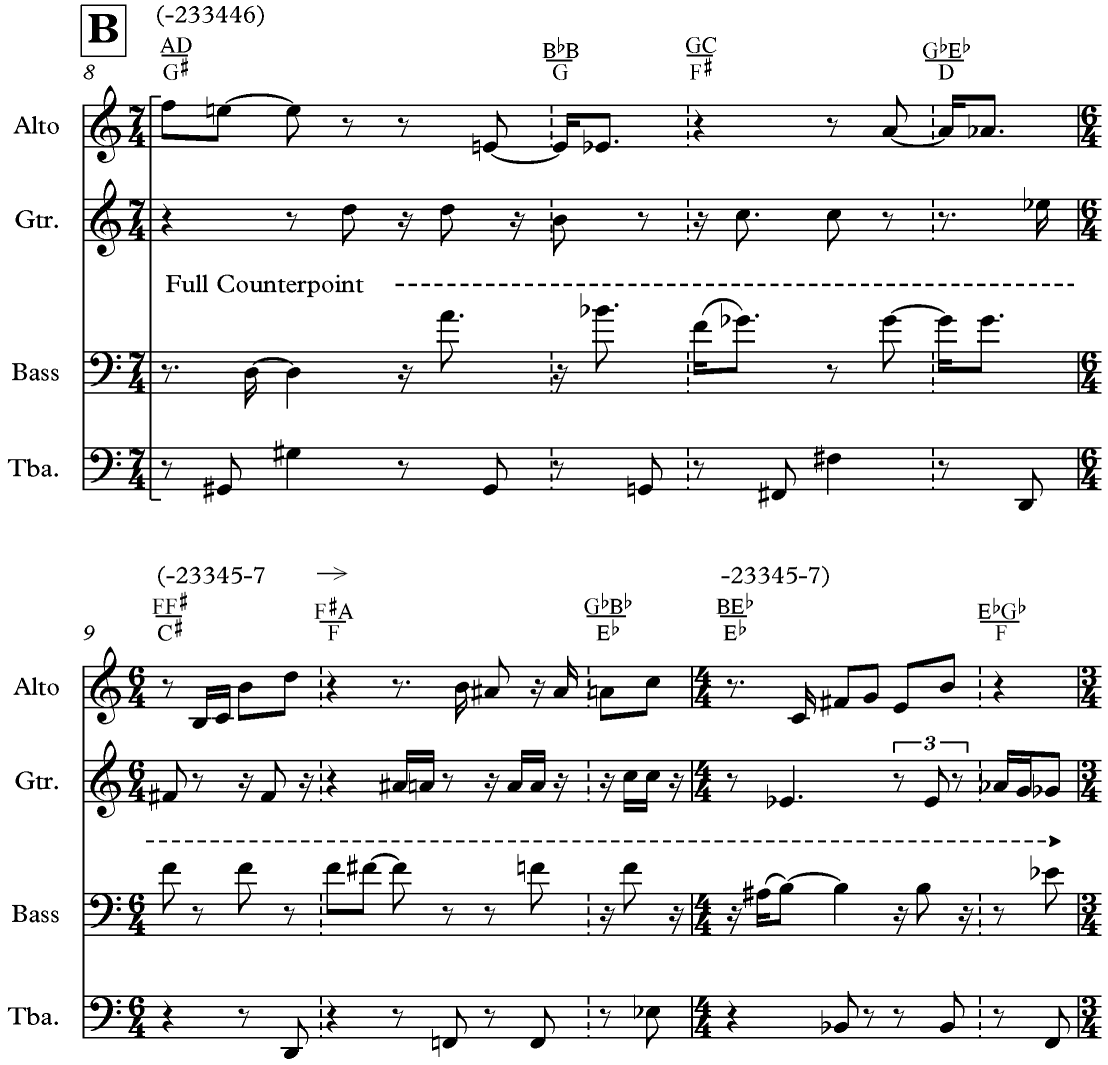


Figure 22 - *After Some Time*, bar 8 - 10: full counterpoint

The first bar of the B section is typical of the way Threadgill coordinates the different pitched instruments around each other. As shown in Figure 22, the rhythms of each part fit together to create a driving dynamic intensity. The alto saxophone, tuba and bass guitar enter at different points of the first beat, followed by the guitar on the second beat. The instruments continue to sound at different points in the remaining bar. Ellman talks about the effect of this type of counterpoint composition.

> Another way his harmony works in this band is that he writes everybody's part sort of like counterpoint for chamber music … So it's more mysterious. And

> rhythmically then, we're all playing this counterpoint so we're not all hitting at the same time. So you hear this (sings). You know, it's like we're playing the harmony but we're not all hitting everything at the same time … But then the rhythm interlock[ing] everything is where the magic happens, it's super funky, you know. (interview 11 July 2015)

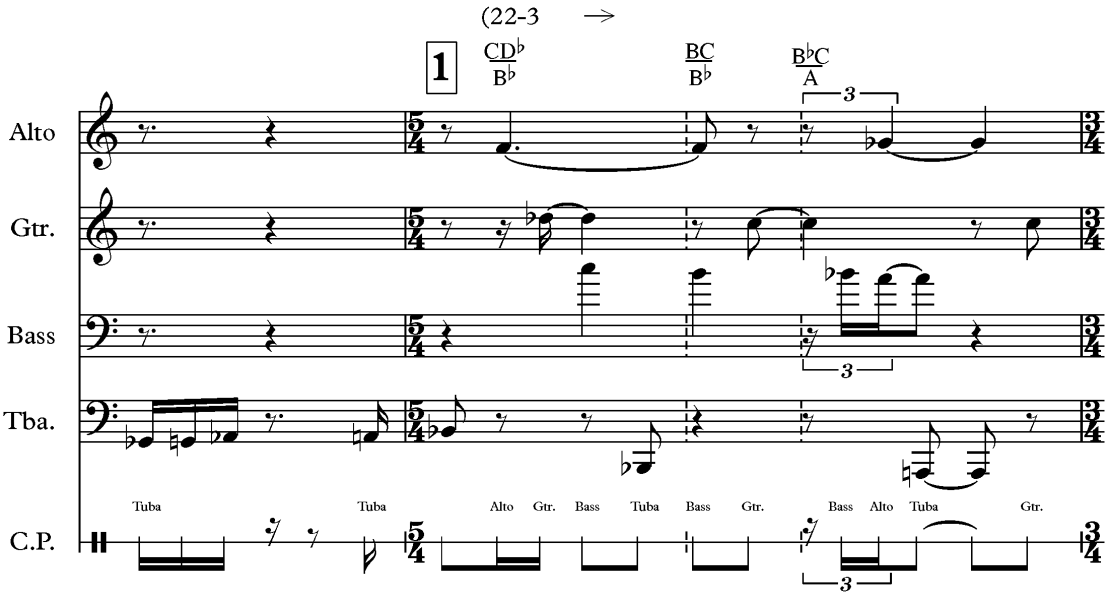


Figure 23 - *Polymorph*, bar 1: counterpoint entries

The opening of *Polymorph* displays another example of counterpoint in Threadgill's written material. In Figure 23 after the tuba anacrusis, the entries of the other pitched instruments are staggered. The tuba plays a quaver on beat 1 of bar 1, followed by the alto saxophone one quaver later. The guitar enters on the last semiquaver of beat 1 before the bass guitar plays on beat 2. As the bar progresses further, the parts remain displaced: tuba is followed by bass guitar, then guitar, bass guitar, tuba, alto saxophone, before the guitar finishes the bar on the final quaver beat. The counterpoint emphases of each instrument have been visualised on the bottom stave marked C.P. This notation will be used to show the level of counterpoint displacement in other examples in this section. While the complexity of counterpoint in bar 1 of

Polymorph could have an adverse effect on the overall feeling of the music, to this author it achieves the opposite. The way the accompanying parts are situated around the alto saxophone melody enhances the line and rhythmic movement of the music.

The following two bars deviate from this approach by showing more uniformity. In Figure 24, the guitar and bass guitar play a unison figure that aligns rhythmically with the tuba. The alto saxophone only plays in the last beat of bar 2, performing two quaver triplets into the next bar. The remaining written material generally modulates between these two arrangements, alto saxophone melody with either three independent parts or guitar and bass guitar rhythmic unison with an independent tuba part.

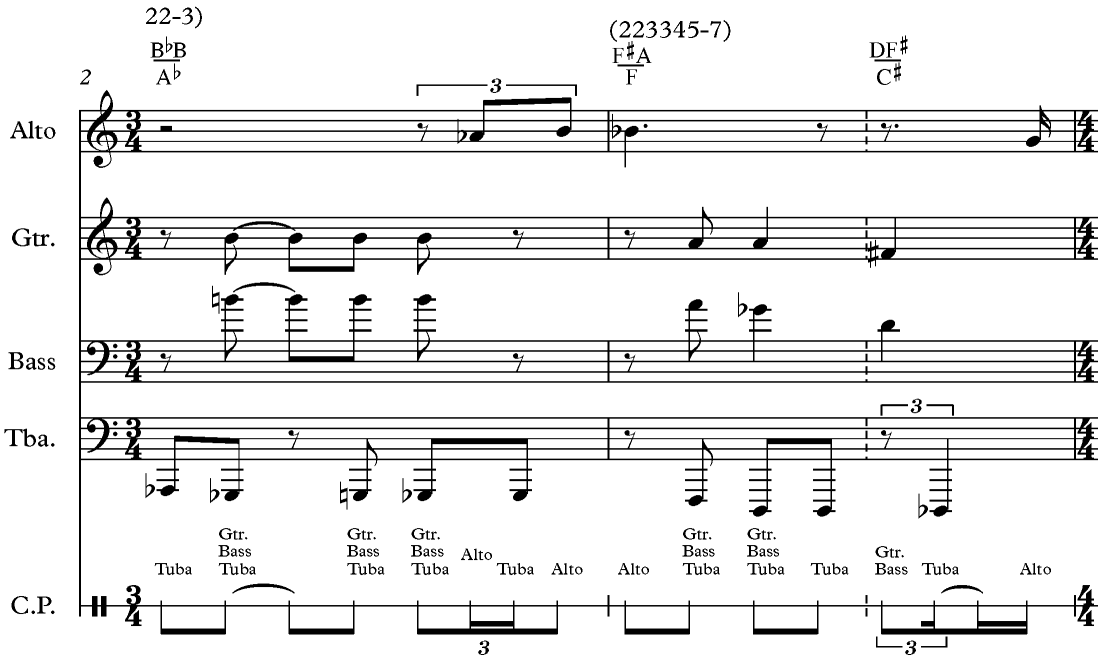


Figure 24 - *Polymorph*, bar 2 - 3: guitar, bass guitar and tuba rhythmic relationship

A third arrangement occurs in the sections marked 4 and 5. The transcribed recording concludes with a bass solo on sections 4 and 5 followed by the written material of

these same sections repeated six times. With the entry of the written material, it appears that the bass guitar continues to improvise around the written parts. The variation in the bass guitar in this section makes it difficult to determine exactly what is present in the score, but it is clear that some of the bass guitar and tuba parts are closely related, sometimes in full unison. Figure 25 is an excerpt from the full transcription of *Polymorph* showing the repetitions of the first two bars of the 4 section written material that close the performance.

In each repetition, the first two bars of the 4 section show bass guitar and tuba in unison. The bass guitar improvisation happening in these sections makes analysis difficult, but there are multiple instances where bass guitar and tuba are playing in unison or close to, specifically in repeats 1, 2, 4 and 6. It is therefore likely that the bass guitar is in unison with the tuba in these bars in the written material. This is evidence of another arranging configuration, where bass guitar and tuba are unison, while alto saxophone and guitar play independent parts. An approximate version of the written material for these bars demonstrating this is shown in Figure 26.

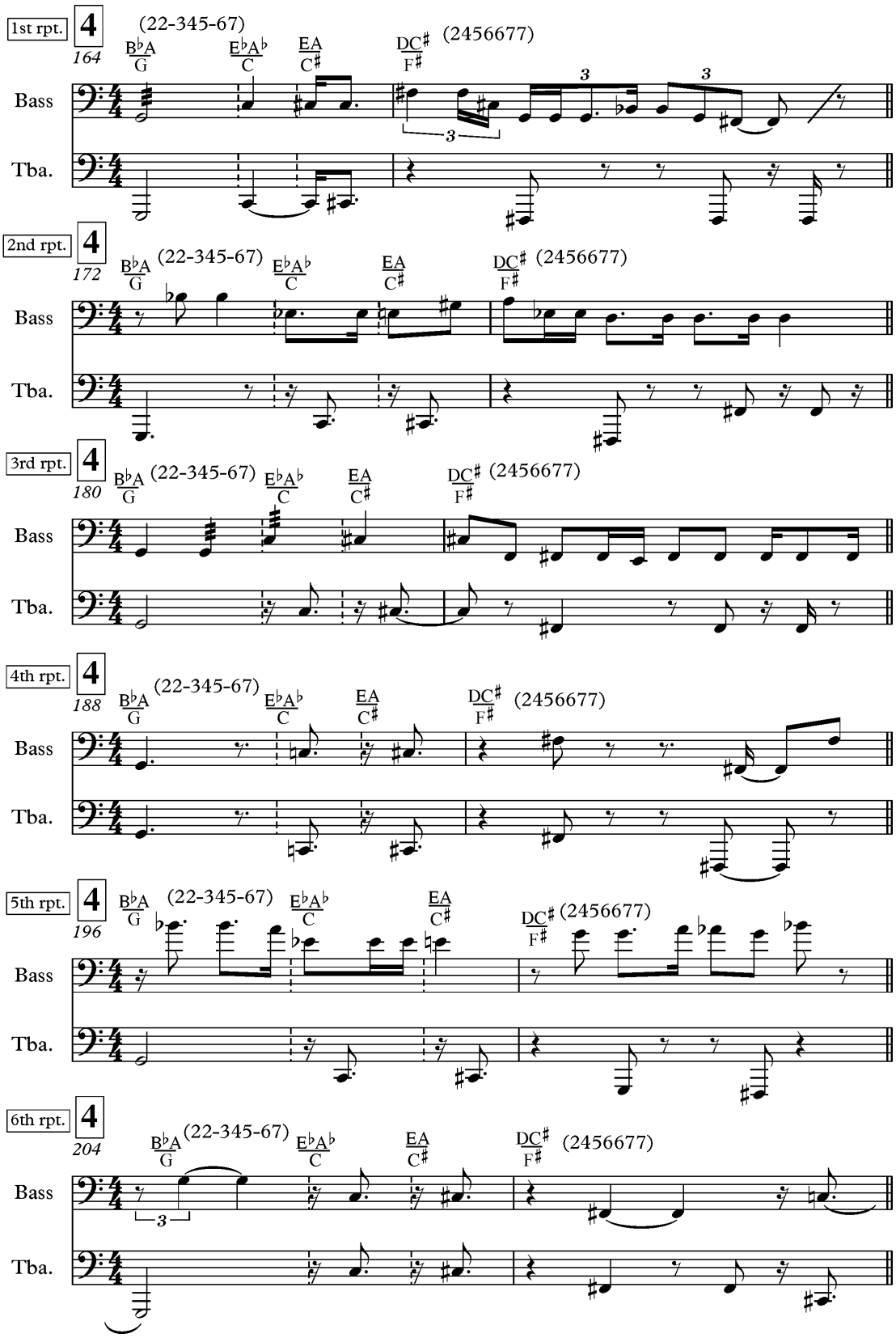


Figure 25 - *Polymorph*: section 4 repeats, bass and tuba

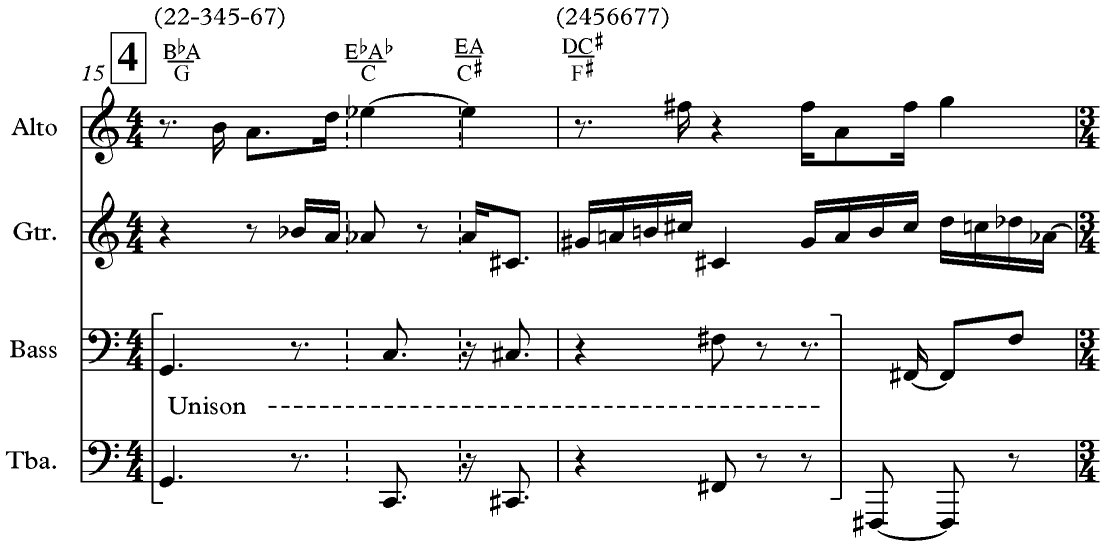


Figure 26 - *Polymorph* written material, bar 15 - 16: bass guitar and tuba unison

Threadgill's use of three counterpoint densities, guitar and bass guitar unison, bass and tuba unison, or four-part counterpoint, is effective in itself. Each density is used for only one or two bars before changing to another configuration. This rapid modulation between levels of complexity contributes to the general sense of mystery in Zooid's music. This is most prominent in the written material for *To Undertake My Corners Open* where melodic focus shifts frequently between instruments.

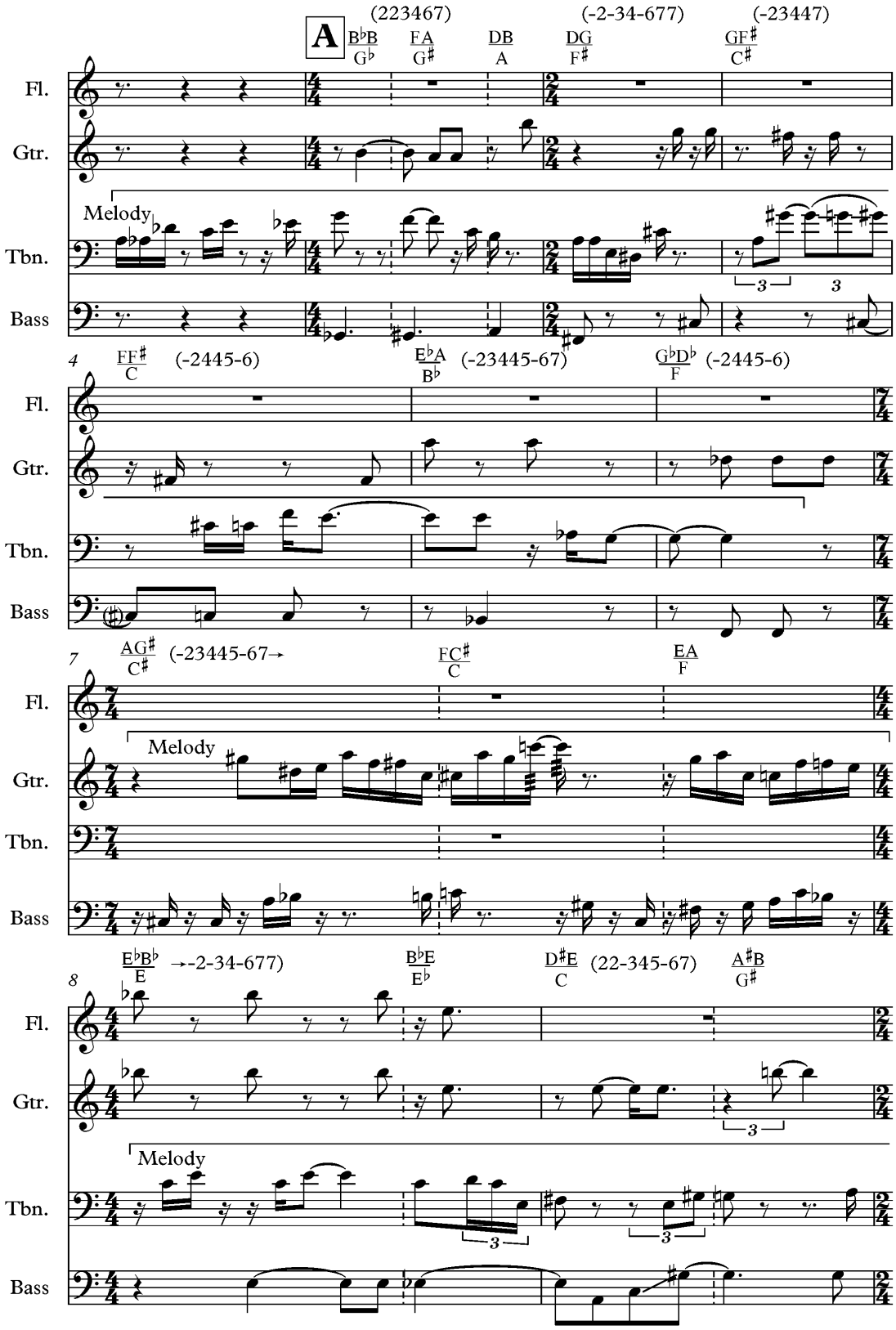


Figure 27 - *To Undertake My Corners Open*, bar 1 - 9: melodic focus

In contrast to the two other transcribed works, *Undertake My Corners Open* features a change in instrumentation, Threadgill plays flute and Davila moves to the trombone. Shown in Figure 27, the written material opens with a trombone melody accompanied by guitar and bass guitar. In bar 7 the melodic focus moves to guitar performing a short melodic figure accompanied by bass guitar counterpoint. Immediately after, the flute enters in unison with guitar in bar 8 accompanying the trombone's return to the melody. In bar 9 and 10 the flute is tacet while the trombone continues the melody. The flute enters again at bar 11, this time in unison with the trombone for the first two beats of the bar. The flute and trombone then enter with a passage of counterpoint accompanied by guitar and bass guitar, where all four pitched instruments play independently.

The next section, marked as B, features another melodic figure from the guitar accompanied by bass guitar, before the trombone and flute alternately enter with melodic material as well as counterpoint playing together with guitar and bass guitar accompaniment until the end of the written material. This is shown in Figure 28. The final four bars, from bar 27 to 30, are of particular interest as the melodic focus rapidly shifts between flute and trombone. This fleeting melodic transfer contributes to the musical climax at this point and can be seen in Figure 29.

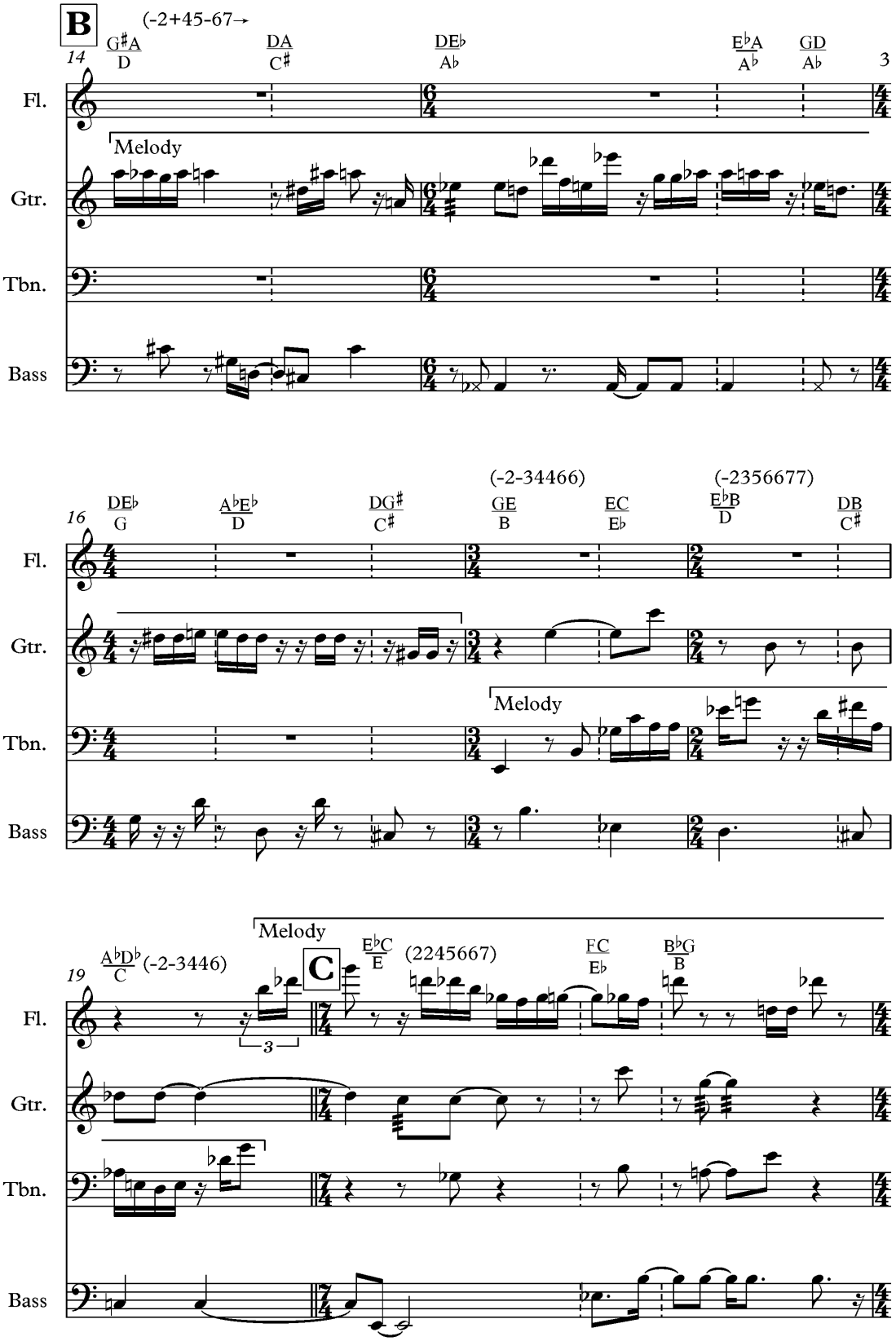


Figure 28 - *To Undertake My Corners Open*, bar 14 - 20: melodic focus

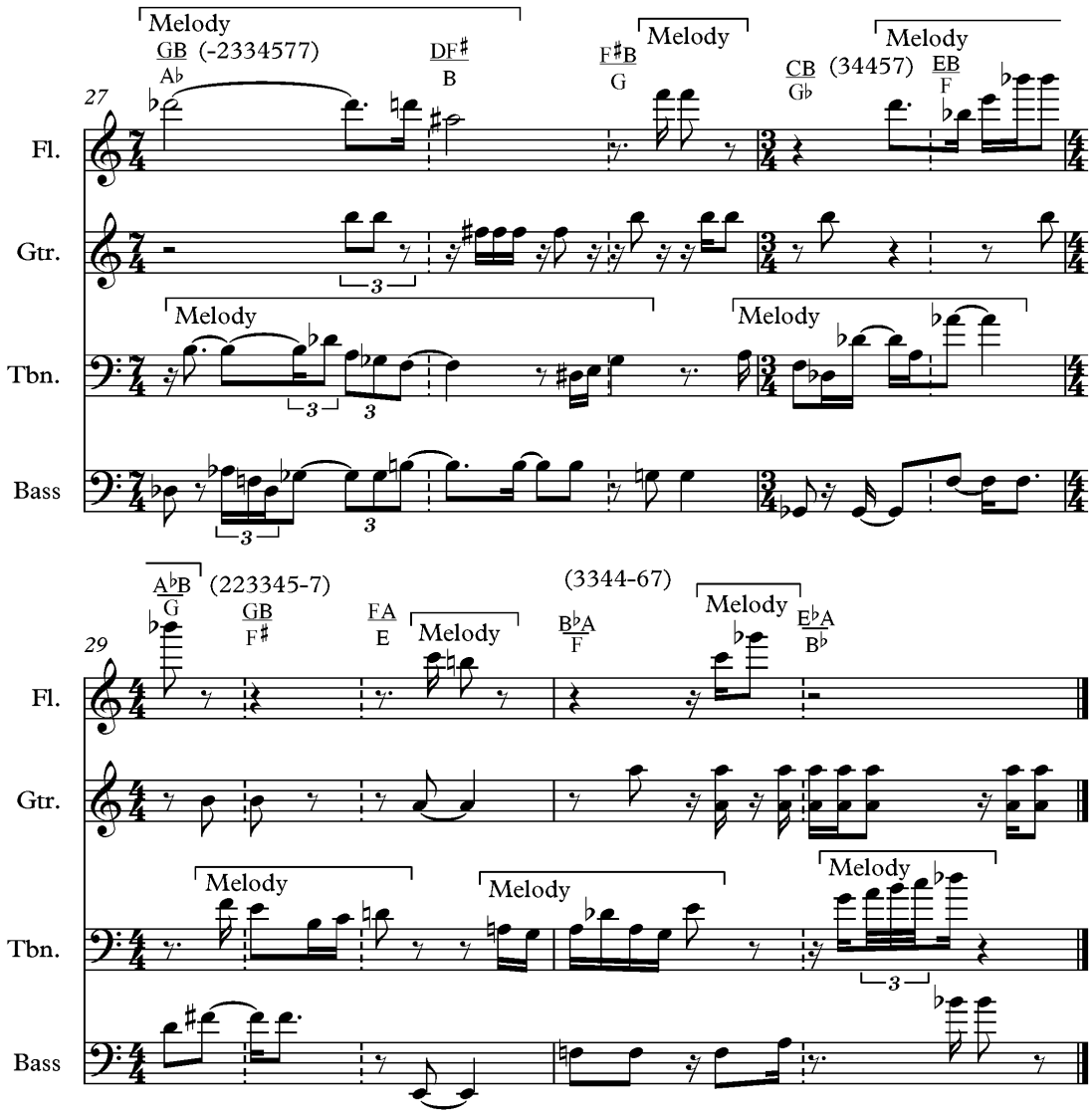


Figure 29 - *To Undertake My Corners Open*, bar 27 - 30: melodic focus

This composition features an number of arrangement configurations, but has four main styles: melody in the trombone accompanied by guitar and bass guitar; shorter melodic figures from the guitar accompanied by bass guitar; flute melody accompanied by guitar, trombone and bass guitar; and melodic counterpoint between flute and trombone accompanied by guitar and bass guitar. The movement of melodic focus between multiple instruments contributes to the dynamic nature of this piece.

The counterpoint that features in the written material of these pieces informs the way

the ensemble plays together when improvising. Their approach to improvisation is markedly different to that of orthodox jazz music. Ellman explains that each instrument has to function in a unique way, in particular, the bass player.

> [If] a bass player comes in and tries to start walking at any point. Stop it, don't do that! You know, it's not that there's anything wrong with walking but you can't walk through this music and make it sound like it's music. It's not made for that kind of movement, it's a different kind of movement. It's a collective rhythmic movement that needs to have enough space. So it's better that you play more like funk music or something, you know. (sings Zooid style bass line) That kind of movement dances and it complements the rest of what's happening in the music. Where as, if you're just going (sings walking bass line), that's a different kind of thing. That's outlining a harmony, to let the soloist go off on a trip and maybe there's dialogue between the drummer and the soloist, and you're just playing, you outline the chords. Now that's a beautiful kind of music and this isn't about not liking that. This is just about how you play Henry's music. So, there's much more communal dialogue happening. (interview 11 July 2015)

The communal dialogue that happens during improvisation in Zooid ends up sounding much like the counterpoint that occurs in Threadgill's written material. Davila further explained this process, mentioning how he converted his part from the written material into what he plays to accompany solos.

> When we go into solos often everything will be in long meter, the lengths of the bars will be doubled. When that happens I try to keep the overall feeling of my line, not by just doubling the length of each note. That was something Henry would encourage us to do, keep the feeling of the line when we expand the bars. (interview 17 December 2015)

The improvised sections provide evidence of this ensemble's style of improvised counterpoint. This is a highly interactive and dynamic practice that contributes greatly to Zooid's unique sound.

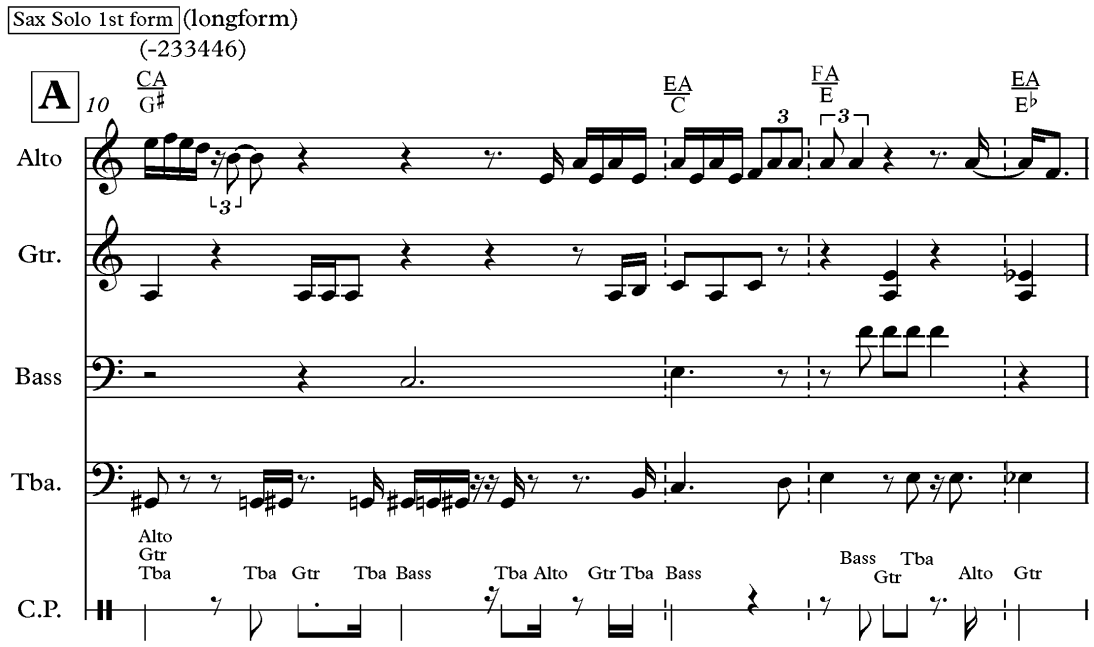


Figure 30 - *After Some Time*, bar 10: alto solo, improvised counterpoint

In *After Some Time*, Threadgill plays the first solo on alto saxophone after the opening written material section. Counterpoint between the pitched instruments is evident in the first bar of the improvisation, as shown in Figure 30. Here, the alto saxophone solo uses the A section in long meter, meaning the first bar of the written material in 6/4 has changed to 12/4 in the improvised section. The alto saxophone, guitar and tuba all enter on beat 1, with the alto saxophone playing a longer phrase extending into the second beat. The tuba follows this on the second quaver of beat 2, before the guitar on beat 3. The tuba plays again on the last semiquaver of beat 3, before the bass guitar enters with a sustained note on beat 4. Already the players are occupying different rhythmic positions within the bar, forming a tessellating pattern of musical

figures that continues in the remaining bar and beyond. On beat 5, the tuba plays on the second semiquaver followed by an extended phrase from the alto saxophone beginning on the last semiquaver. Underneath this alto saxophone phrase the guitar enters, then tuba, then bass guitar. As with the written material, each part in this bar contributes to the counterpoint, displaying a distinct and interlocking rhythmic line within the improvised context.

Davila's comments about maintaining the character of his written part during improvisation are evident here. In the first half of the bar, he almost exclusively plays G-sharps and G-naturals, reflecting the first two notes of the written material of this bar. Further, the majority of these notes are played off the beat, imitating the written material entry on the last semiquaver of the first beat. This treatment of the written material, maintaining the character of a figure while improvising, grants the player freedom to make creative and aesthetic choices regarding their playing within the group. As well as being an important creative practice in the group, Davila's comments are revealing and relate to Threadgill's development of creative improvisation approaches in Zooid.

Counterpoint improvisation is evident throughout this performance of *After Some Time*. For instance, in the first bar of the guitar solo, guitar, bass guitar and tuba all play rhythmically contrasting parts, as shown in Figure 31. Again in long meter, the bar length has doubled from 7/4 in the written material to 14/4 in the solo. The first three notes of the bar are spread between the three players; tuba on beat 1, bass guitar on the following quaver, and guitar on beat 2. Of particular note is the way guitar and tuba play between each other, filling the spaces between statements and even between

single notes. The bass guitar compliments this by playing a sparser and more rhythmically static figure. The counterpoint continues until beat 8, where guitar and tuba align for four semiquavers. This is the beginning of an extended guitar phrase that lasts until beat 13. The tuba again aligns with three of the last four notes of the guitar phrase, highlighting the deep rapport present in this ensemble.

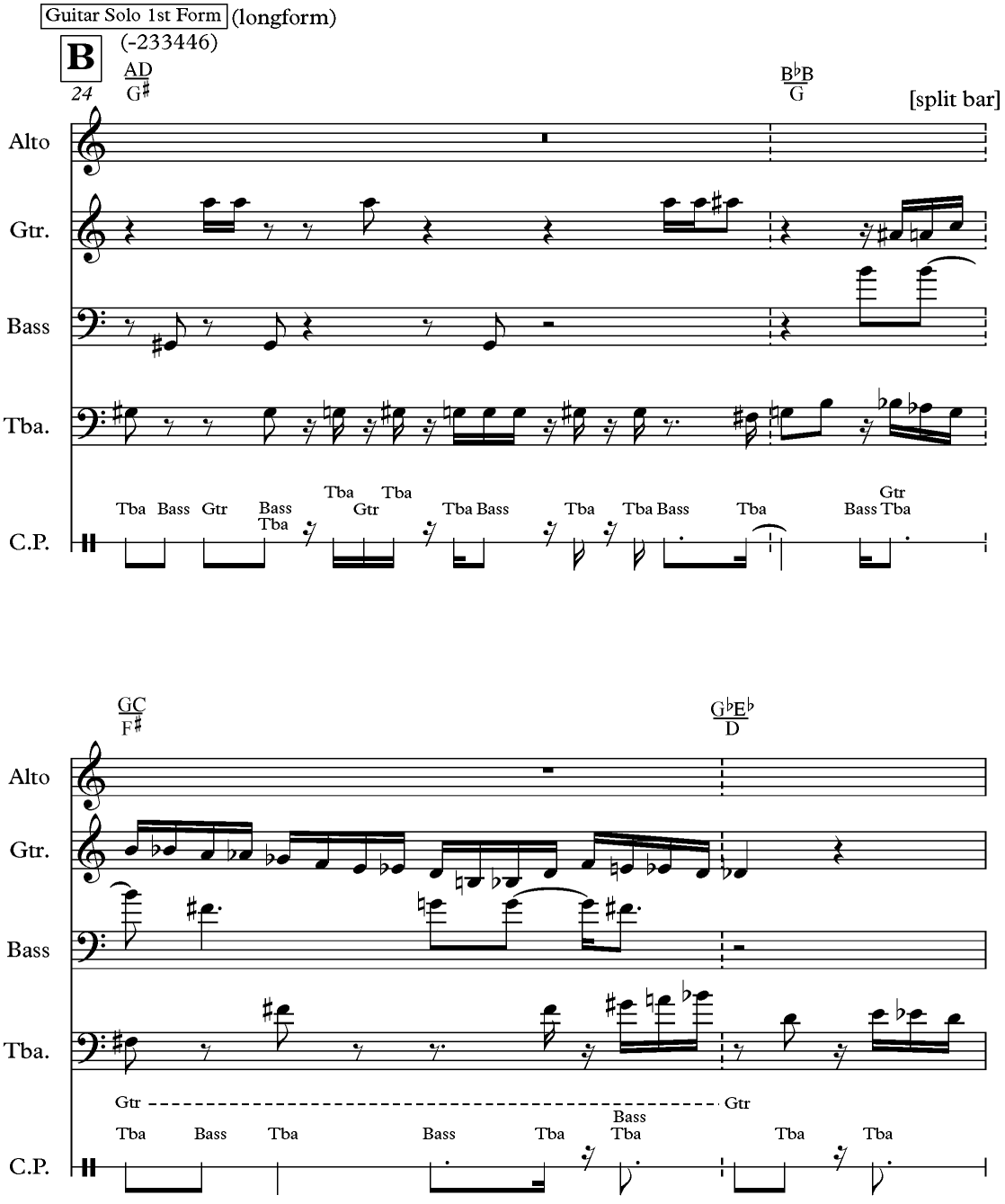


Figure 31 - *After Some Time*, bar 24: guitar solo, improvised counterpoint

Counterpoint improvising can also be found in the other two transcribed pieces. In Figure 32, bars 24 to 25 of *Polymorph* show counterpoint in the tuba solo. Guitar, bass guitar and tuba start together on beat 1 of bar 24. The players move to counterpoint after the tuba's initial ascending line with guitar and bass guitar interjecting between the tuba's first two phrases.

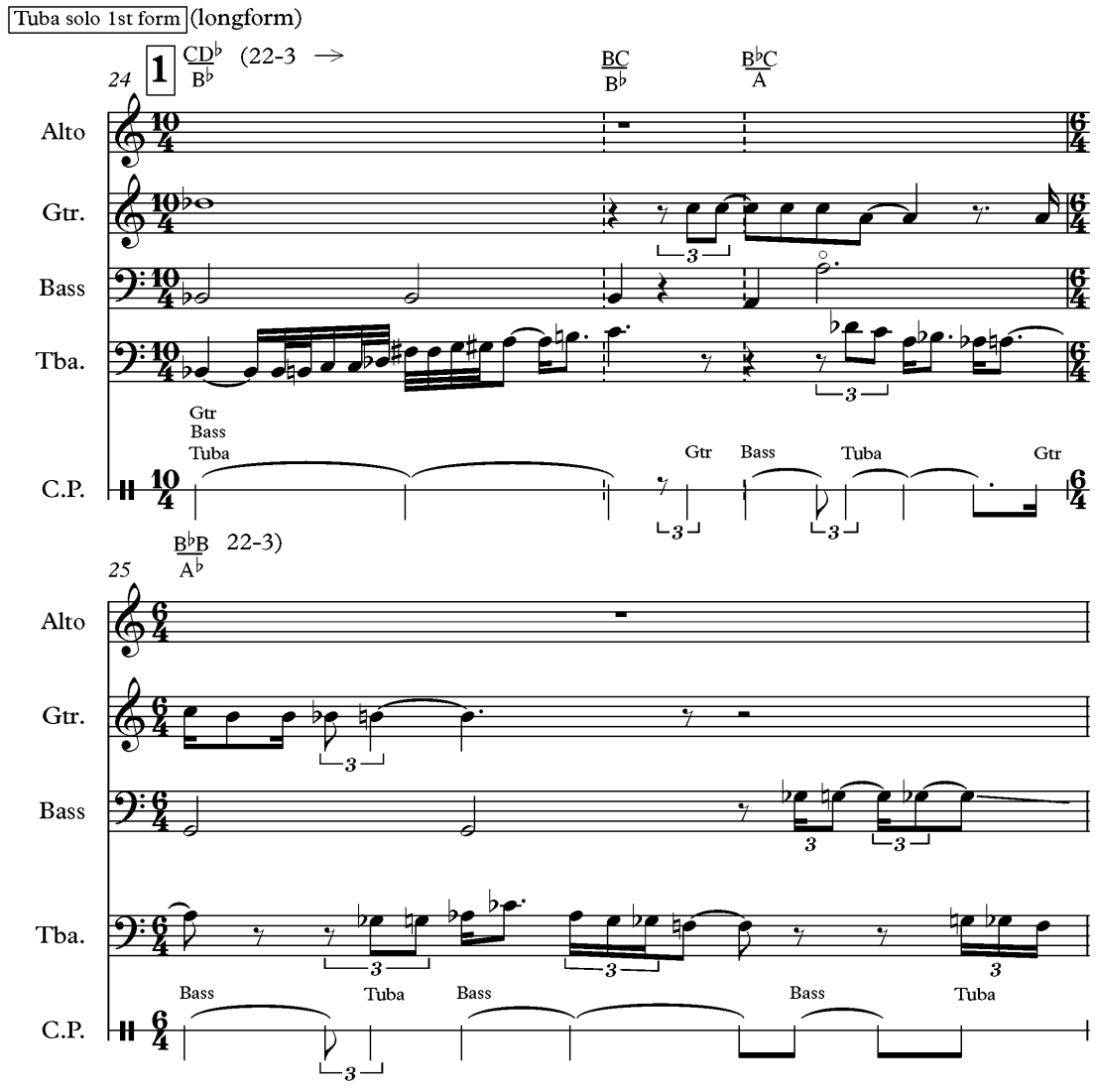


Figure 32 - *Polymorph*, bar 24 - 25: tuba solo, improvised counterpoint

As well as featuring counterpoint improvisation, *Polymorph* shows the accompanying guitar and tuba repeatedly use parts of their written material behind the soloist. The

final solo of in this recording of *Polymorph* is from the bass guitar. The solo uses the same form as the sections that close the piece, sections 4 and 5. At various points in the solo, the guitar and tuba play figures from their written material in these sections. For example, bars 138 and 139 feature guitar and tuba performing nearly identical figures to that of their corresponding written material as shown in Figure 33.

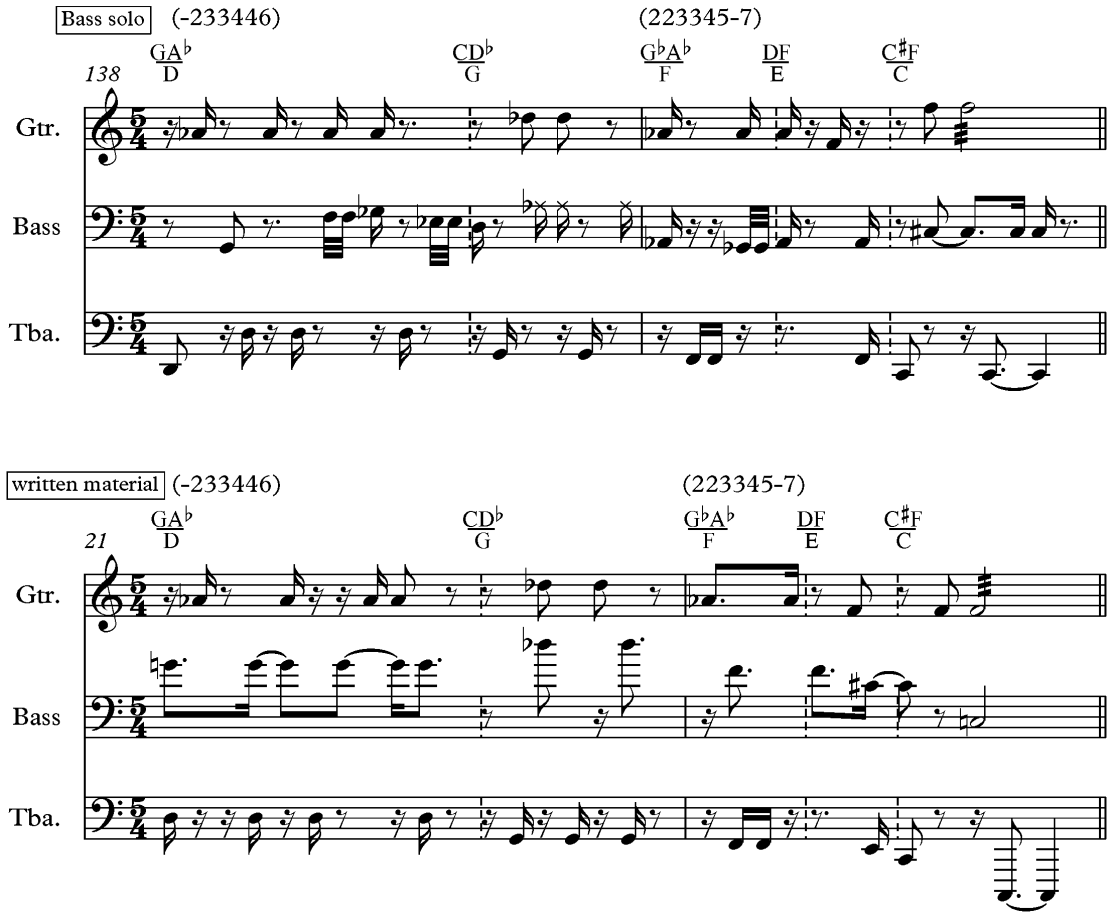


Figure 33 - *Polymorph,* bass guitar solo bar 138-139; written material bar 21-22: guitar and tuba comparison

The figures played by guitar and tuba foreshadow the written material to come and obscure the delineation between improvised and written material sections. Compounding this, when the alto saxophone enters playing the written material, the bass guitar remains improvising to a large degree. The later part of this piece can be

seen as gradual crescendo, building all the way from the beginning of the bass solo until nearly the end of the piece. The written material figures used within the bass solo and the improvisations in the ensuing written material both help to hide the transition between each section and allow the music to build continuously towards the ending.

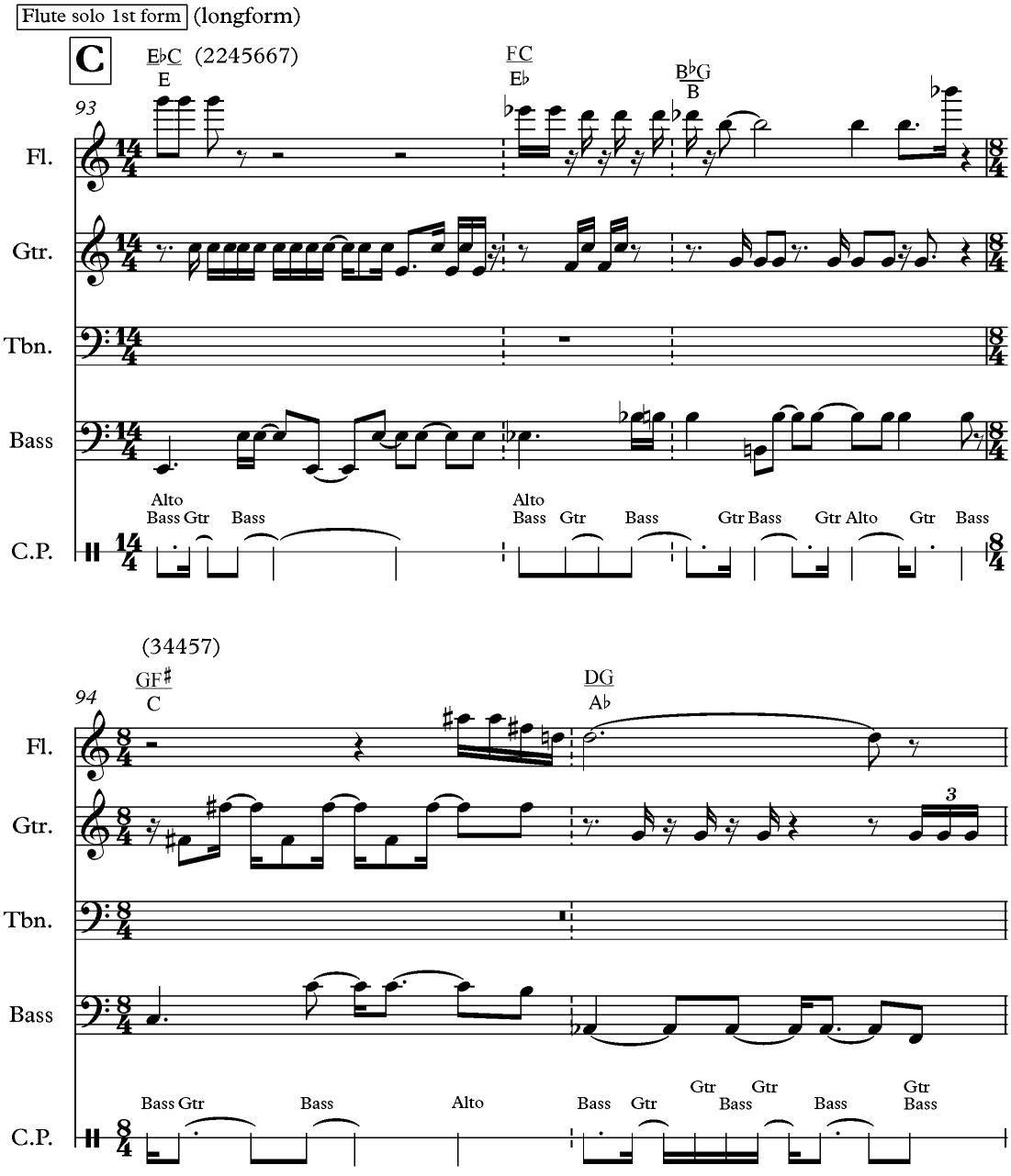


Figure 34 - *To Undertake My Corners Open*, bar 93 - 94: flute solo, improvised counterpoint *To Undertake My Corners Open*'s changed instrumentation (Threadgill and Davila

play flute and trombone, respectively) leaves accompaniment to be played only by guitar and bass guitar. In comparison to the other transcribed pieces the number of accompanying voices has been cut, yet evidence of improvised counterpoint remains. In the flute solo, on a modified version of the C and D sections in long meter, bars 93 and 94 show counterpoint activity from the guitar and bass guitar between the flute's relatively sparse phrases as shown in Figure 34.

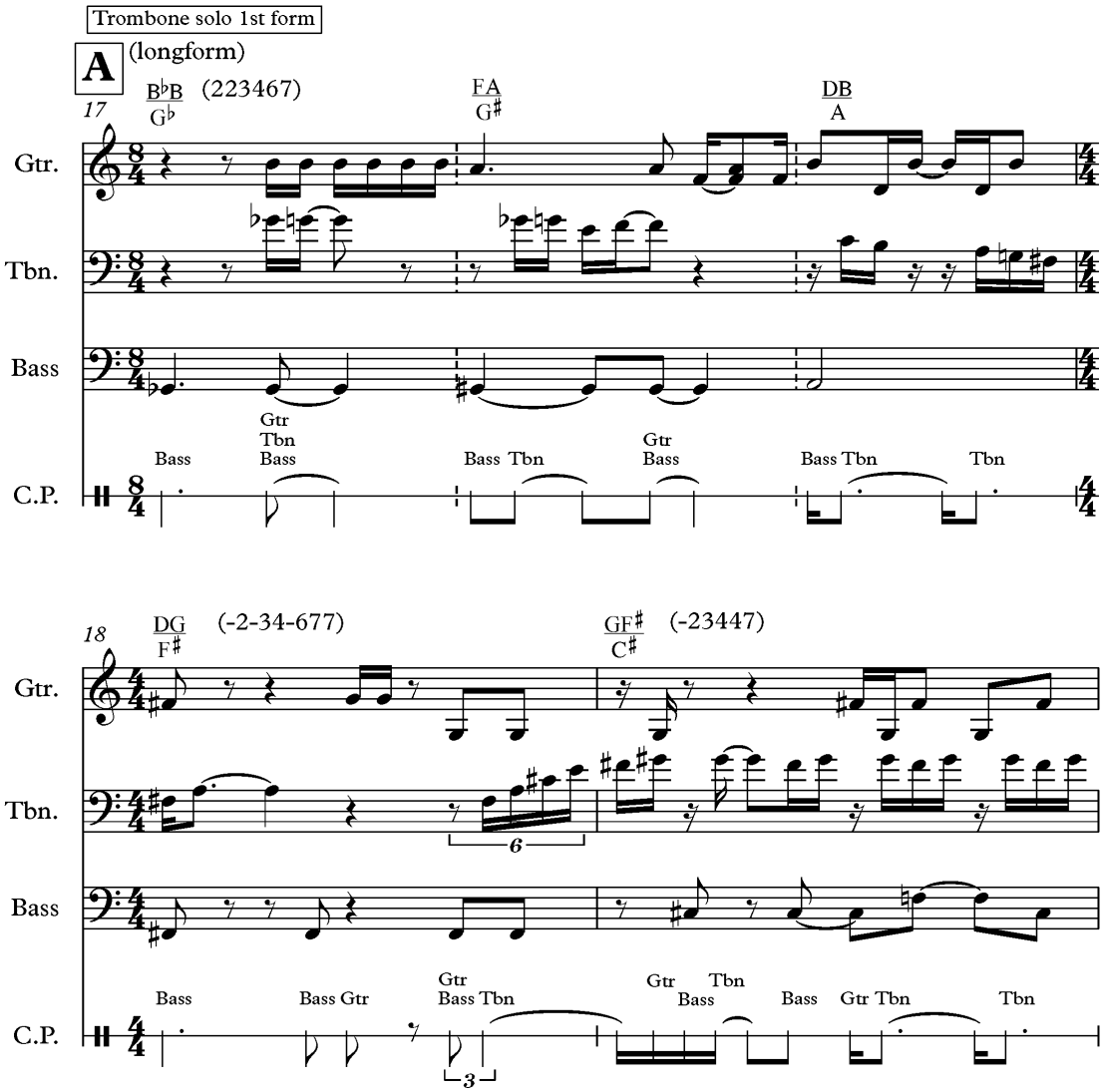


Figure 35 - *To Undertake My Corners Open*, bar 17 - 19: trombone solo, improvised counterpoint

In the earlier trombone solo of *To Undertake My Corners Open*, bars 17 through 19

feature counterpoint accompaniment with rhythmic similarity between the guitar and bass guitar, as shown in Figure 35. While playing separate parts, the guitar and bass emphasise similar points in the bar while improvising. This can be seen in the guitar entry in bar 17, all three players play on the quaver after beat 2, then the guitar and bass emphasise beat 4, the quaver after beat 5 and beat 7. The parts vary more in the next two bars, but still coincide on beat 1 and 4 of bar 18 and the last quaver of bar 19.

The author suggests that this style of solo and accompaniment playing in *After Some Time*, *Polymorph* and *To Undertake My Corners Open* is reflective of a well-developed group dynamic. Zooid has been a consistent ensemble, barring minor personnel changes, since the early 2000s. Over this time, the musicians working within Threadgill's innovative systems have developed a highly nuanced and intimate musical relationship. The instances of improvised counterpoint mentioned here show a shared understanding between the players that has been built over the considerable amount of time Zooid has been performing and rehearsing. Additionally, this practice can be linked to the counterpoint featured in Threadgill's written material.

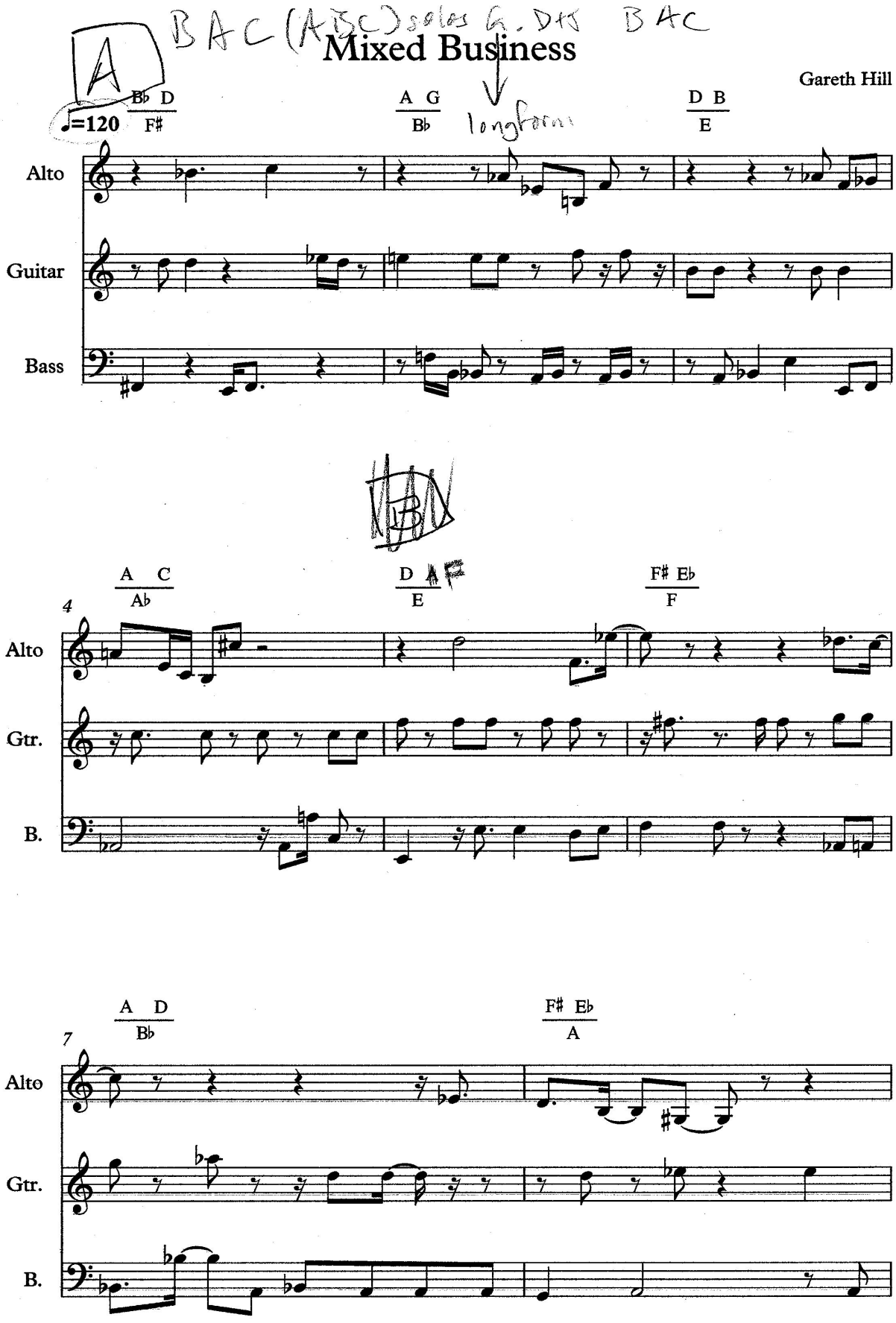
It should not be ignored that Threadgill's leadership, along with his composing, has undoubtedly led to the formation of this group's unique improvisational style. Threadgill's efforts have brought together committed, capable and like-minded individuals who can learn his multifaceted musical approach and help to develop it further. The practices mentioned in the previous sections of this chapter, form modification, harmony, melodic conception and counterpoint, all contribute to the dynamic and ambiguous nature of this music. Threadgill has created an ensemble that

performs in a highly unique and innovative way.

Chapter 4 – Creative Works

As previously stated, a primary aim of this research is to further the author's creative practice. To this end, Threadgill's music for Zooid has been explored with reference to the idiomatic compositional and performative concepts that have developed in the ensemble. This chapter details the creative component of this project, where Threadgill's concepts are explored within the context of the author's composing and performing.

Eight new compositions have been produced for this project. The creation of these pieces has been continuous throughout the research process and has allowed new concepts to be explored in the creative domain as they were found. The following compositions are presented chronologically, detailing the developing comprehension of Threadgill's approach and the evolution of the author's compositional and performance practice. The scores included here are facsimiles of those used in performance and as such include handwritten annotations pertinent to the study. Each score is accompanied by the author's reflections on the compositional and performance process for each piece. This is not intended to be a compositional diary of this output. Instead, reflections concern the adaptation of Threadgill's concepts rather than provide a complete discussion of compositional materials. These descriptions will also assist the understanding of some of the performance iterations found on the recordings listed in Appendix 2.


BAC (ABC) solos G. D# BAC
A
Mixed Business
Gareth Hill
♩=120
Bb D
F#
A G
Bb
longform
D B
E
Alto
Guitar
Bass
A C
Ab
D
E
F# Eb
F
4
Alto
Gtr.
B.
A D
Bb
F# Eb
A
7
Alto
Gtr.
B.

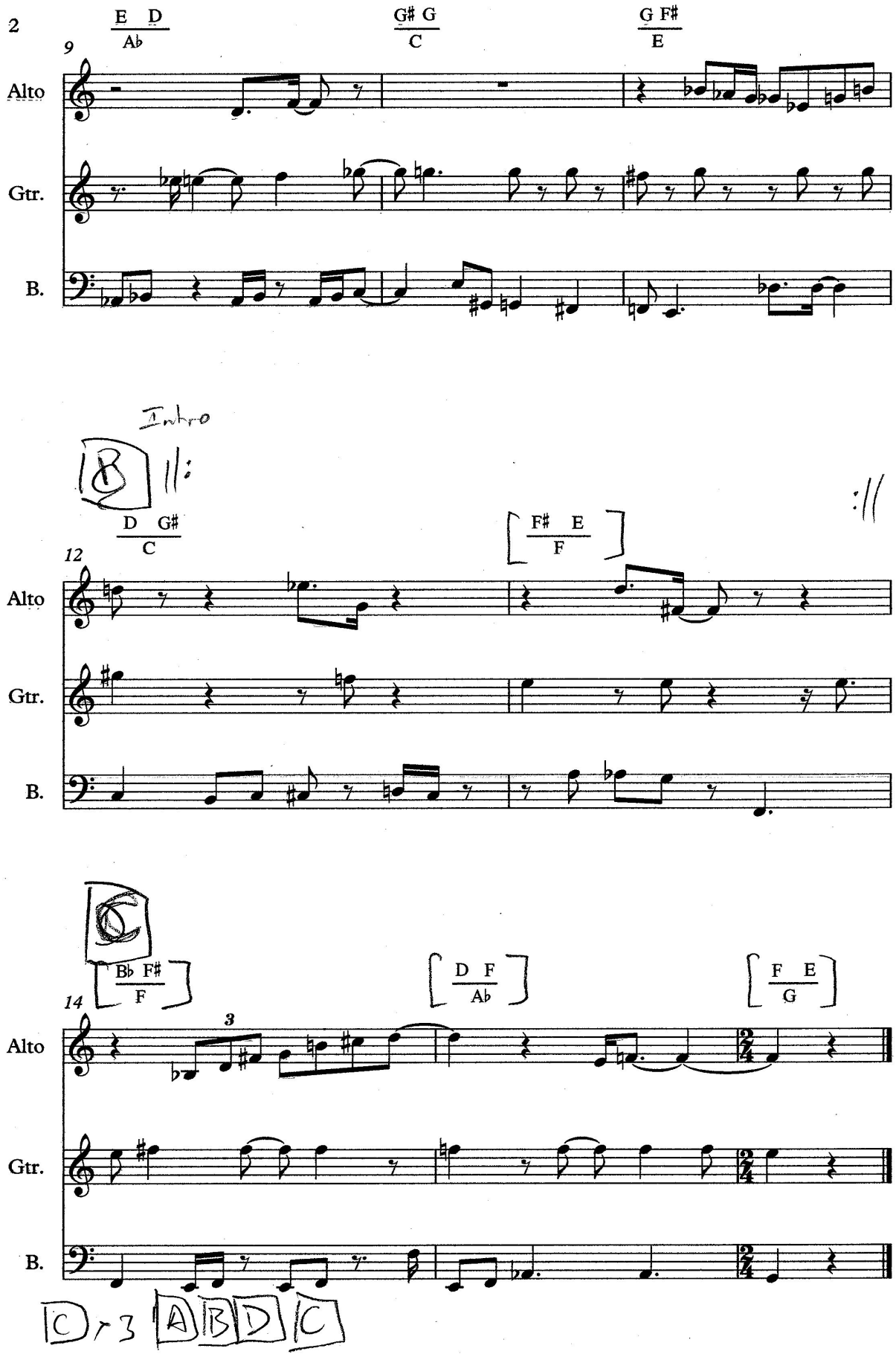


Figure 36 - *Mixed Business*

Mixed Business

This was the first composition written for this project. As such, inspiration for this piece came from information gained in preliminary listening and early efforts in transcribing Threadgill's music. This limited understanding of his approach lead to developing new performance methodologies for Slow Code that differed from the concepts as they were understood later in research.

Mixed Business was written prior to the formation of Slow Code. Conceived initially as a two-voice piece, melody is taken by the alto saxophone with double bass providing a counterpoint accompaniment. The melody is motivic with short, irregular alto saxophone statements punctuating the double bass line, reflecting early impressions of Zooid. When Slow Code was formed, a guitar part was added providing another layer of counterpoint to the existing voices.

Early experiments with the quartet of Slow Code relied on each player reading from a score that included the written material for alto saxophone, guitar and double bass. The rhythmic independence of each part made the provision of a full score for each instrumentalist necessary for ensemble coordination. It also allowed performers to use material from other parts in performance.

Initially, rehearsals focused on playing the written material and exploring the way improvisation could be included in performance. At first, chord symbols were not included in the scores so improvisation relied solely on the notated music. The soloist was required to navigate through the piece against the written parts as

accompaniment. It quickly became clear that this was not an effective method of performing for this ensemble; the accompanying parts did not give a clear enough sense of harmony and would require considerable rehearsal to make this a practical approach. As a result harmonic notation, drawn from Threadgill's system, was included to assist improvising. The three pitches that best represented the overall sound of each bar were written using the Zooid notation, a horizontal line dividing a bass note from an upper and middle note. This notation had been discovered in early research through Ross's Banff workshop and made improvisation more manageable in Slow Code while still preserving a harmonic aspect of the written material.

Initially used without accompanying interval sets, Threadgill's harmonic notation posed challenges for improvising in ensemble. While improvising, the author found that he could not rely on practices such as chord/scale relationships to deal with harmony in this system, instead a different approach developed. Many of the three-note groupings contained in *Mixed Business* presented a very different sound to that of mainstream jazz chords. For instance, the harmony of bar 5 and 6 are (E D F) and (F F# E♭) respectively, neither of which conform to the triadic structures seen in the majority of jazz harmony. The unusual sound of these and other harmonies combined with the unfamiliar appearance of the notation proved daunting at first but suggested opportunities for further exploration.

The process of familiarisation began initially for the author as internalising the sound of individual three-note groupings. This involved a practice of arpeggiating the pitches of each harmony on double bass, exploring various configurations in multiple registers of the instrument. Later, these groupings were combined to develop and

understanding of the progression of the entire form. Replicating a practice suggested by Hoffman, the author used a looping pedal to record a contrapuntal version of the harmonic progression. This could be played continuously to allow aural familiarity of the progression as a whole and to test improvisational ideas. An important discovery found during this practice was the flexibility this harmony contained. A large variety of other pitches could be used to colour each grouping in different ways, resulting in a significant sense of freedom once the overall sound of the harmonic progression had been internalised. This familiarisation practice greatly enhanced the experience the author had when playing with Slow Code. He felt a stronger musical connection with the performances of the other members of the ensemble due to this increased harmonic familiarity.

As with many of these compositions, the form of *Mixed Business* was modified for the various performances included in this project. While briefly discussed in published interviews, this aspect of Threadgill's approach was only fully understood after meeting with Hoffman, Davila and Ellman, and comparing the transcribed recordings to Ellman and Hoffman's guitar and cello parts. This important feature is used in Slow Code to similar ends to Zooid; rearranging a familiar composition can reveal new performance possibilities, requiring concentration and a creative approach from the ensemble to deal with different challenges.

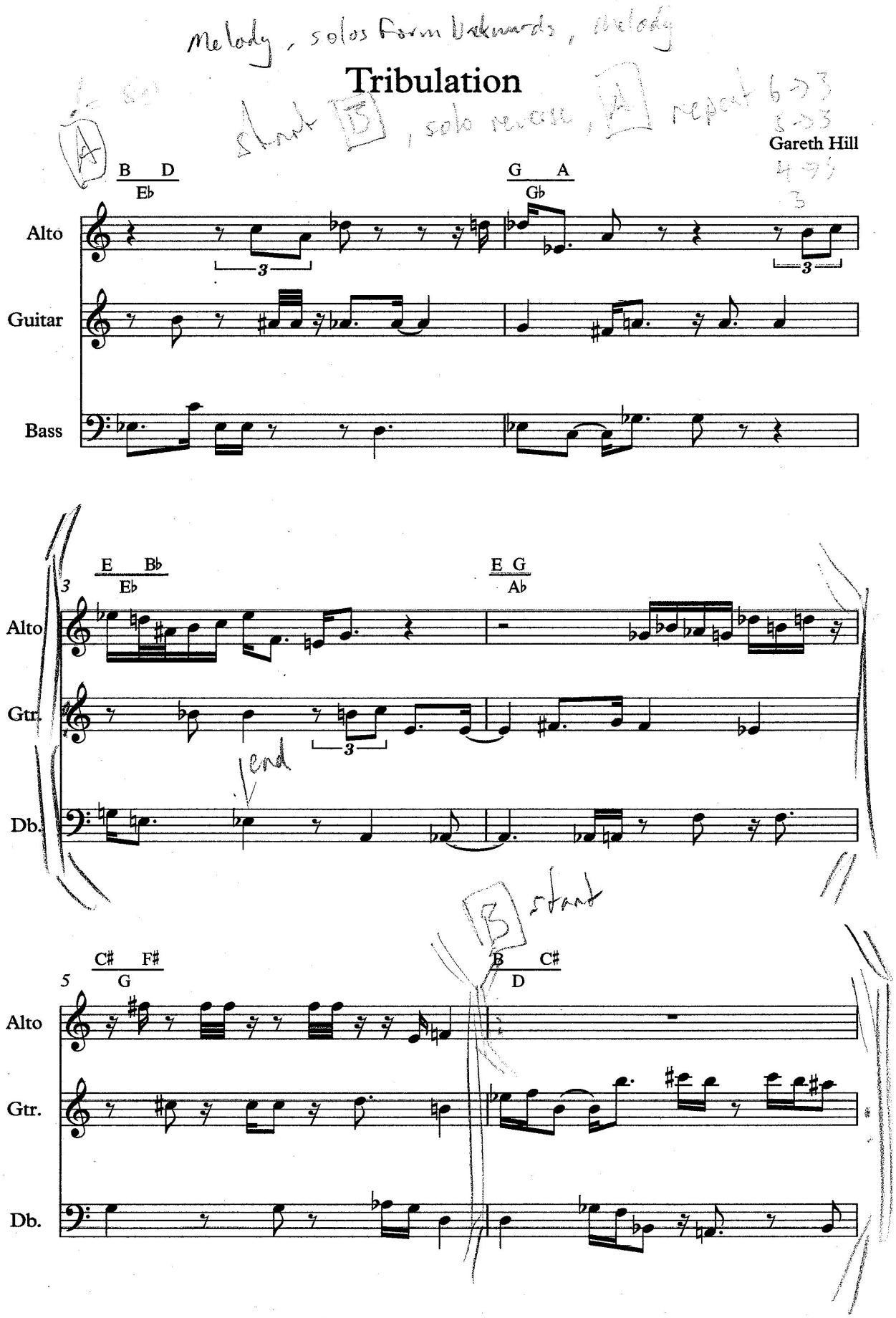
Early performances closely followed the written form of the piece. The entire written material opens the performance, before the complete form was used for improvising, ending again with the written material. As this project spanned a number of years, numerous performance opportunities meant Slow Code gained a significant level of

familiarity with this composition. At the same time, research had revealed Threadgill's various techniques for form modification making *Mixed Business* and many of the other compositions included here ideal vehicles to explore this concept in live performance.

A later arrangement of this composition includes the use of repetition, restructured written material and long meter and can be heard on some of the live recordings included in the folio, the 303 and Smith's performances. To facilitate this new form, *Mixed Business* was divided into three lettered sections: the A section from bar 1 to 11, the B section from bar 12 to 13, and the C section from bar 14 to 16. The arrangement begins with the written material of the B section repeated three times, followed by the written material of the A and C section. A double bass solo is performed using a modified version of the whole form; bars 1 to 12 are played in long meter then 13 to 16 return to regular meter. This is followed by a combined solo from alto saxophone and guitar using the whole form in regular meter. The piece ends with the same written material arrangement that opened the performance.

This version of Mixed Business presented new challenges. For the author, the habits from performing the piece in its original form were difficult to unlearn. In particular, it took a significant amount of concentration to not play from the beginning of the written material as the piece was originally composed. Yet, this arrangement opened up new aspects of the piece; the repetition of the B section set a different mood for the written material, while the use of long meter in the double bass solo allowed the harmony to be more thoroughly explored. As will be shown in the remaining compositions, form modification was a challenging and stimulating technique for

Slow Code.


Melody, solos form backwards, melody
Tribulation
Gareth Hill
B D
Eb
G A
Gb
Alto
Guitar
Bass
E Bb
Eb
E G
Ab
Alto
Gtr.
Db.
end
C# F#
G
B C#
D
Alto
Gtr.
Db.

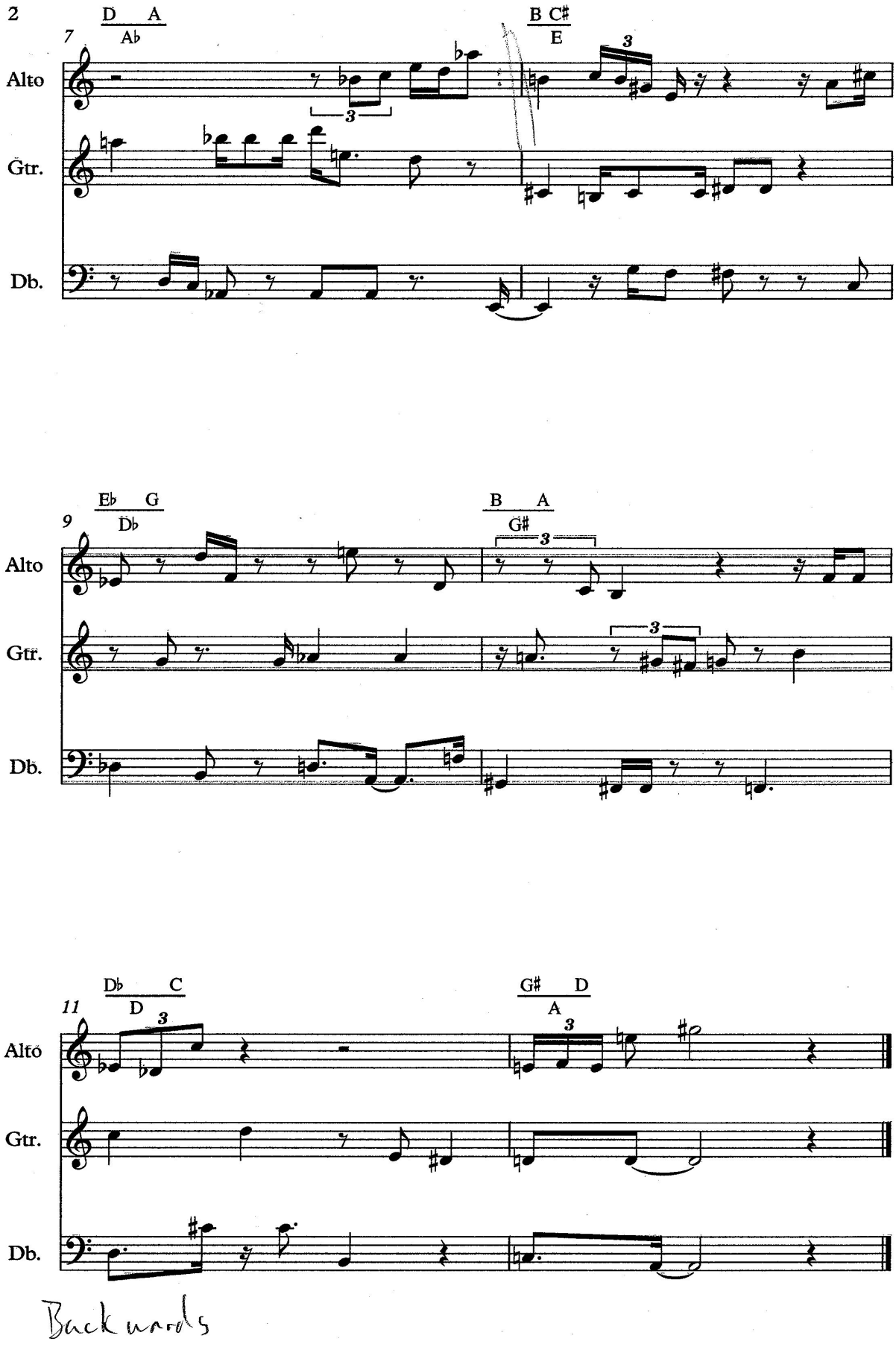


Figure 37 - Tribulation

Tribulation

Tribulation was written with a similar approach to the previous composition, *Mixed Business*. A melody consisting of motifs of irregular length was composed for the alto saxophone with accompanying counterpoint in guitar and double bass. This configuration varies in bar 6, where the alto saxophone melody pauses allowing the guitar to take melodic focus. This shift of melodic focus, while brief, reflects similar examples found in the transcribed works and the approach is used more extensively in subsequent compositions.

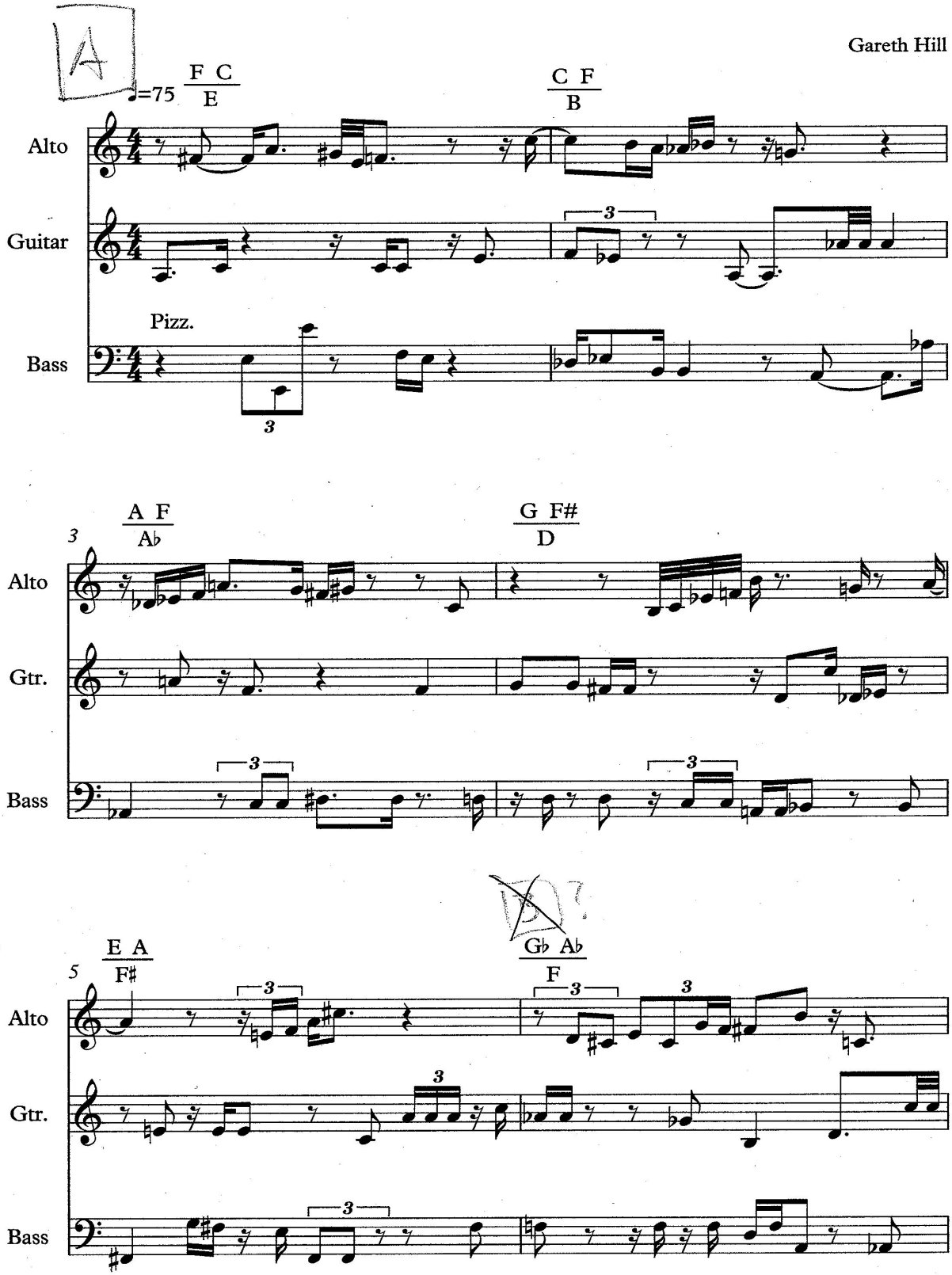
Initial performances used the written material of *Tribulation* in its original configuration to begin and end the piece, with solos employing the same form. A number of modifications were made in later performances, including soloing using the form in reverse. This is a form modification used by Threadgill and is discussed further in Taylor's research (2015). In this arrangement, the solo form uses the existing harmony but starts from the last bar and progresses backwards. This produced a related yet transformed harmonic progression that resolved in unexpected ways, a significant challenge in performance. Reverse harmony was preserved in many arrangements and can be heard on the Smith's recording. In this performance, the composition was divided into two sections, the A section from bar 1 to 6 and B section from bar 6 to 12. The piece opens with the first two bars of the B section repeated, bars 6 and 7, which ends when the alto saxophone enters with the written material of bar 7. The written material of the remaining B section from bar 8 to 12 follows before double bass and alto saxophone play solos on the entire form in reverse. The written material beginning from the A section closes the piece with a

series of progressively smaller repeats of the passage between bars 3 to 6. As a closing statement, the written material from bar 1 to 6 is played, followed by bar 3 to 5, then bar 3 to 4, and finally bar 3 to end the piece.

A B solos A S+A, D+G, S+D+G x1 B

How Did You Get This Number?

Gareth Hill



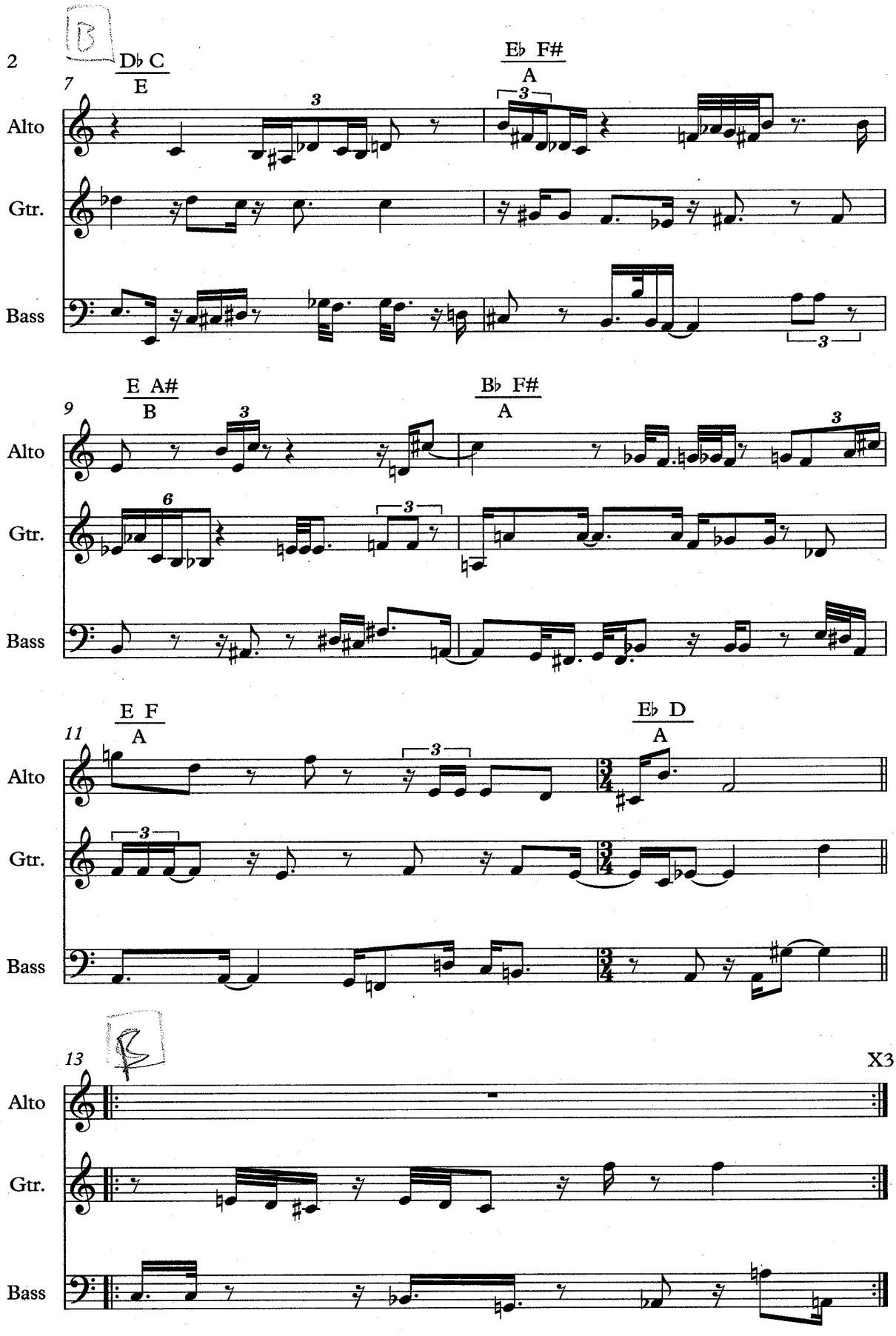


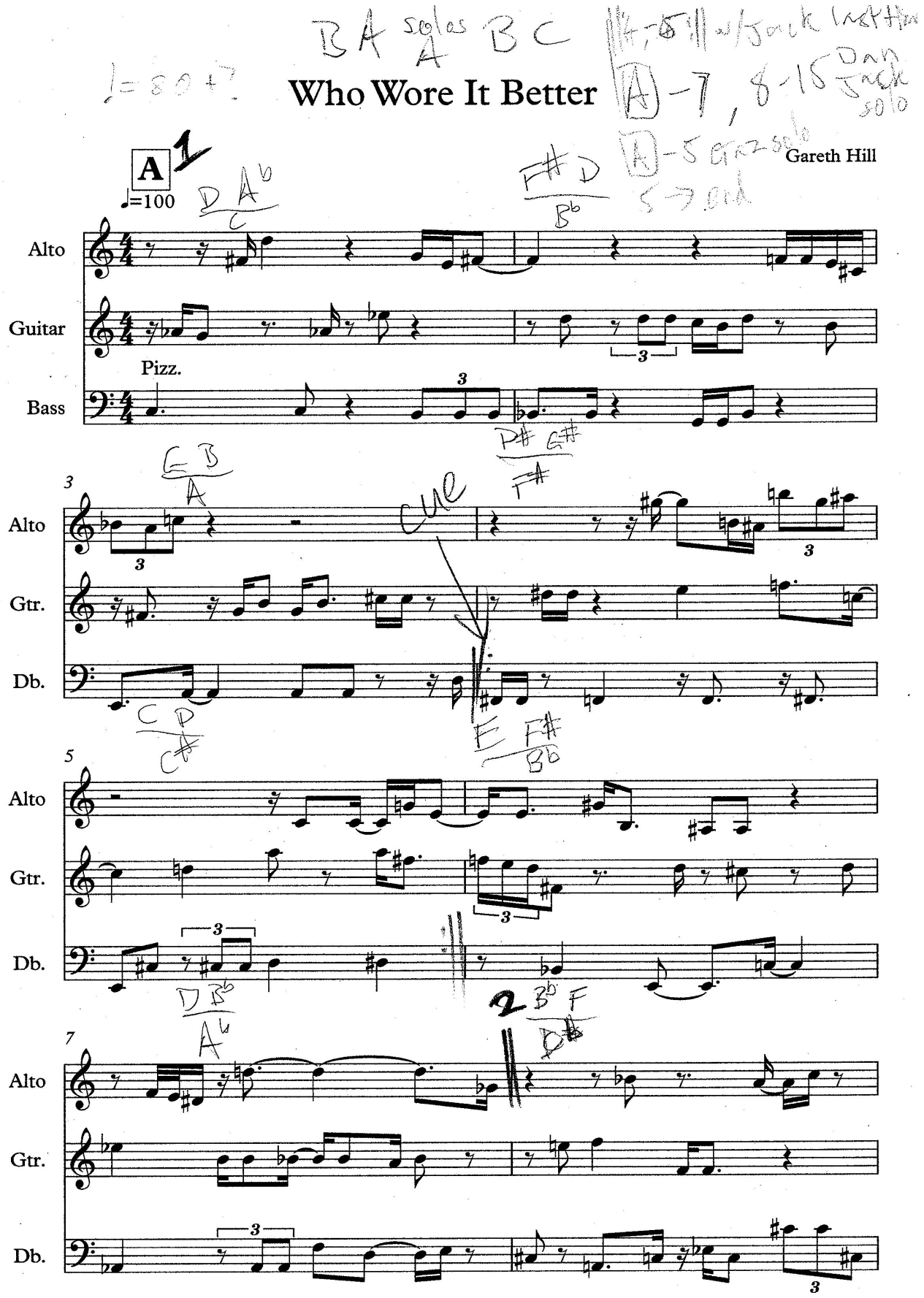
Figure 38 - *How Did You Get This Number*

How Did You Get This Number

This composition was written primarily to explore further rhythmic variation between an alto saxophone melody and guitar and double bass counterpoint accompaniment. While the majority of the written material is semiquaver-based, this piece also extends into use of demisemiquavers, triplet quavers and triplet semiquavers in various combinations. During rehearsals the piece was divided into two sections, each utilising a different compositional arrangement. The A section features similar melody and counterpoint writing to the previous pieces, while the one-bar B section consists of a guitar figure accompanied by double bass. This section draws conceptually from the repeated passages seen in *After Some Time* with melodic focus in the guitar part. The B section was originally marked to be repeated three times. In performance, this section was instead repeated four times to allow smoother transitions into other sections. Additionally, the alto saxophonist often chose to enter here playing the guitar figure, the unison sound providing contrast to the counterpoint of the A section.

The arrangement for the studio recording of *How Did You Get This Number* experimented with dividing the ensemble into duos for improvised sections. The form of the piece was not significantly modified. It opens with the written material from the A and B sections before leading into duo improvisations on the A section, firstly from alto saxophone and drums followed by guitar and double bass. Then the whole ensemble enters performing a group improvisation on the A section, before the B section is repeated four times to close the piece. Duo improvisations do not feature in any of the other pieces written for this project. This feature differentiates the piece

from the way the group normally functions, providing a dramatic change in timbre and space for one-to-one interaction.


Who Wore It Better
Gareth Hill
A
♩=100
Alto
Guitar
Pizz.
Bass
Gtr.
Db.
3
5
7

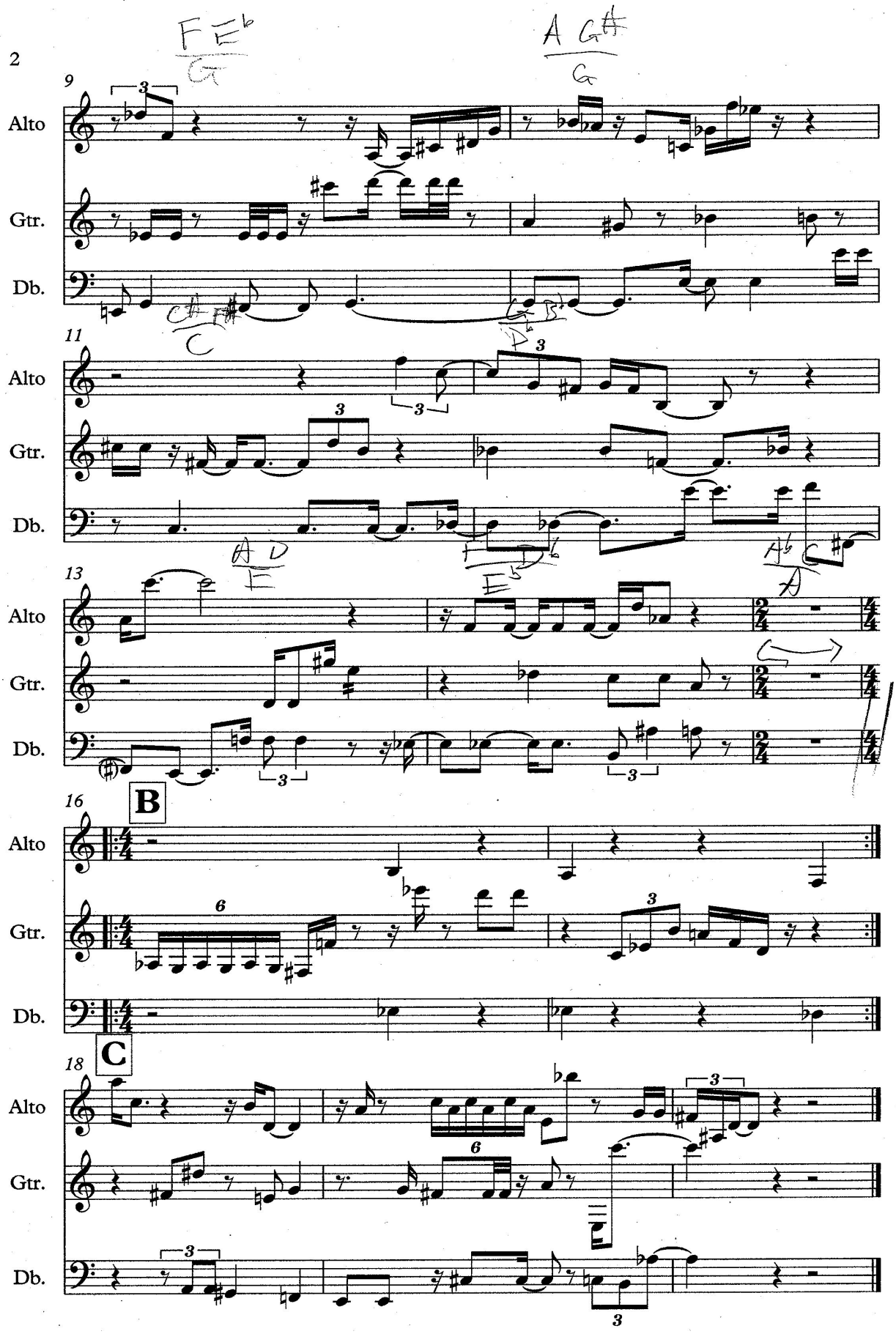


Figure 39 - *Who Wore It Better*

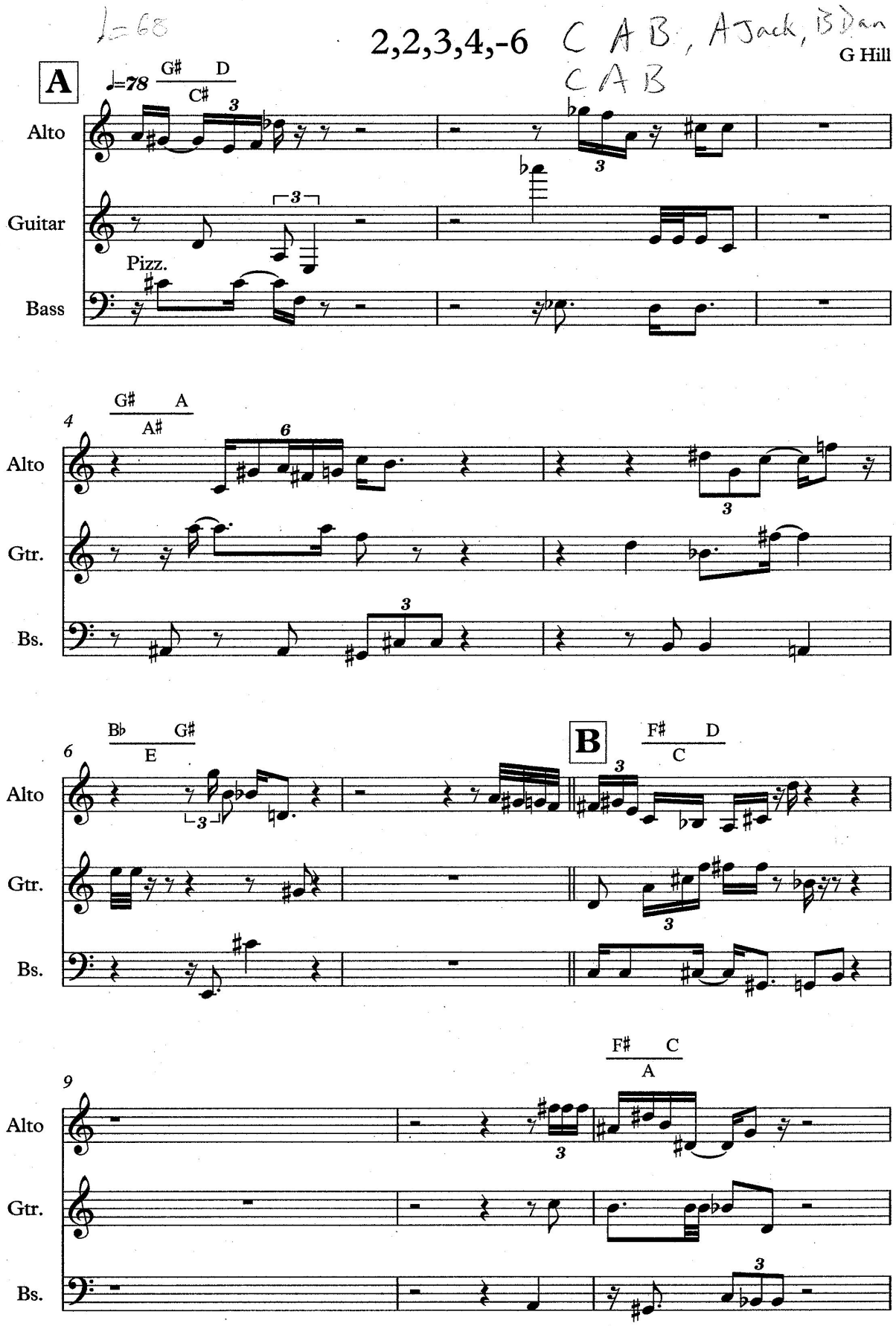
Who Wore It Better

Who Wore It Better was written midway through the research process; a number of performances had been given presenting the new compositions, two transcriptions had been completed, and a fieldtrip to New York provided new information through interviews and witnessing Zooid performances. At this point, there was still considerable research to complete before developing a deep understanding of Threadgill's approach and the concepts behind this music. As such, this is the last of the pieces utilising only the techniques discovered in early research: motivic melody, counterpoint accompaniment, shifts of melodic focus, and repeated figures.

The composition is divided into three sections. The A section contains an extended melodic passage from the alto saxophone accompanied by guitar and double bass counterpoint. The B section switches melodic focus to a repeated guitar figure accompanied by alto saxophone and double bass in rhythmic unison, before the C section returns melodic focus to the alto saxophone for the remaining three bars of the piece. As with the previous compositions the harmonic notation is used in a similar way, taking three notes from the written material that approximates the harmony of each bar. This harmonic notation style was used in all of the remaining pieces. The sheet music includes hand written harmony notation, as the piece was brought to rehearsal without these markings. The harmonic information was only given for the A section as the B and C sections were not intended to be used for solos.

Form modification again featured in later performances of *Who Wore It Better*. In the Smith's performance, the written material from bars 4 and 5 open the piece as a

repeated figure from guitar and double bass. The alto saxophone enters with the written material of bar 4 before leading directly to bar 1 where the written material is performed until bar 7. The A section from bar 8 to 15 is used as the form for guitar and alto saxophone solos, followed by a double bass solo on bars 1 to 5. The alto saxophone plays the written material in bar 5 to signal the end of the bass solo and the remaining written material is played from bar 6 to close the performance.


♩=68
2,2,3,4,-6 C A B, A Jack, B Dan
C A B
G Hill
A
♩=78
G♯ D
C♯
Alto
Guitar
Pizz.
Bass
4
G♯ A
A♯
Alto
Gtr.
Bs.
6
B♭ G♯
E
B
F♯ D
C
Alto
Gtr.
Bs.
9
F♯ C
A
Alto
Gtr.
Bs.

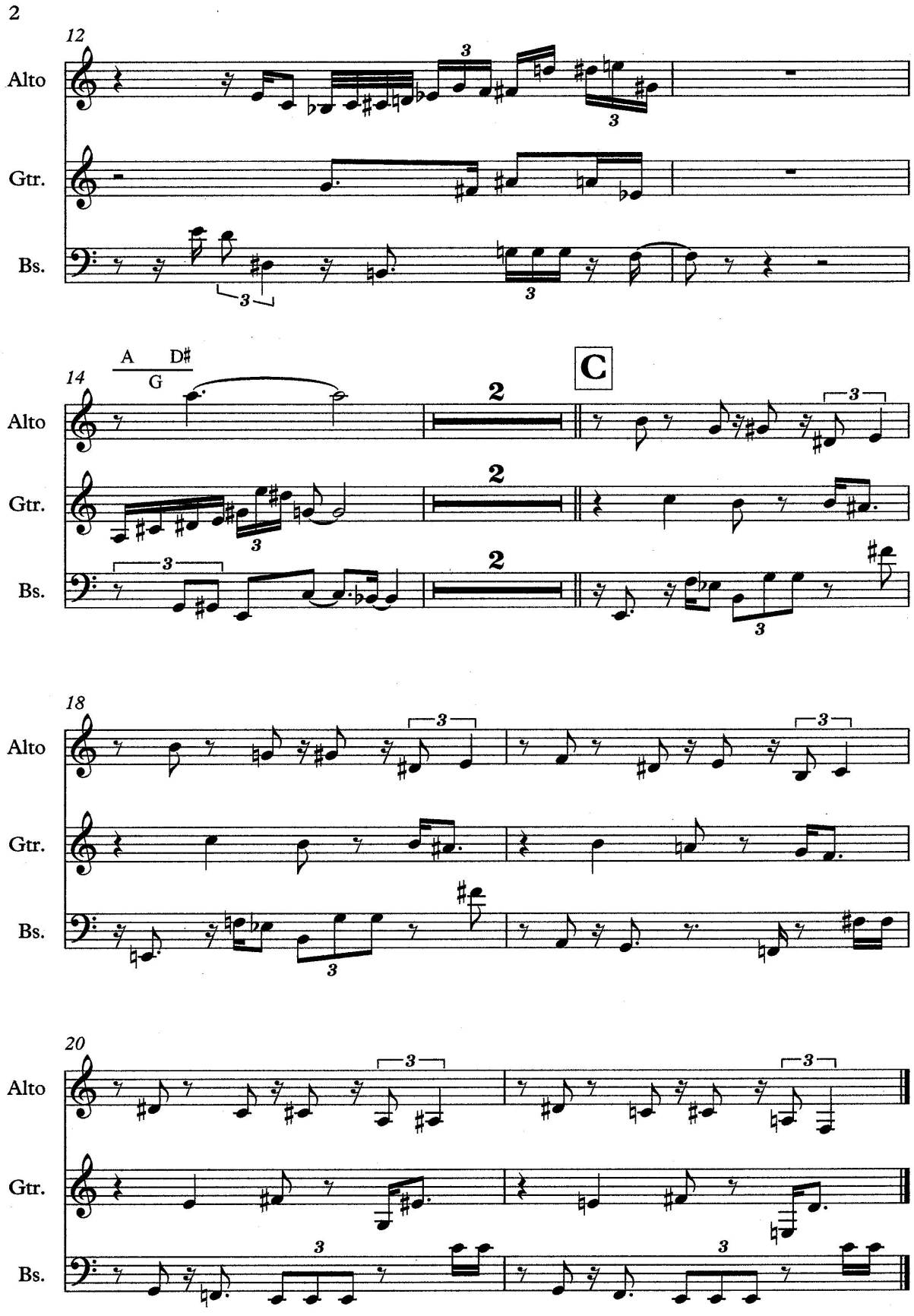


Figure 40 - *2,2,3,4,-6*

2,2,3,4,-6

2,2,3,4,-6 investigates Threadgill's intervallic system. The title refers to the interval set this composition is based on: a minor and a major 2nd, a major 3rd, perfect 4th and a minor 6th. The written material is constructed using these intervals, exploring how this approach can generate new melodic shapes. Despite this focus on intervallic relationships, the overall piece is largely conceived as a feature for drums. Short motifs from alto saxophone, guitar and double bass have been sparsely positioned through the A and B sections to allow drums to improvise around them. The remaining C section contrasts this, featuring a counterpoint figure between alto saxophone, guitar and double bass varied five times.

As this piece was composed later in the project, form modification was used but not significantly explored. For instance, the studio recording begins with the written material from the C section followed by the A and B sections. The alto saxophone then solos on the A section before a guitar solo using the B section. The harmonic notation written in these sections occurs every two or three bars in contrast to the previous pieces where harmony is provided every bar. This spacing allows an improvised harmony to occur between the written harmony, the idea being that accompanying players would create additional harmonic movements by devising a series of notes using the intervals from the interval set that led towards the next written harmony. Soloists were also encouraged to use the interval set to inform their improvising. This flexible approach to harmony created unusual and unexpected pitch groups, and a sense of instability between the written harmonies. Significantly, close attention was required within the ensemble for meaningful improvisations to occur.

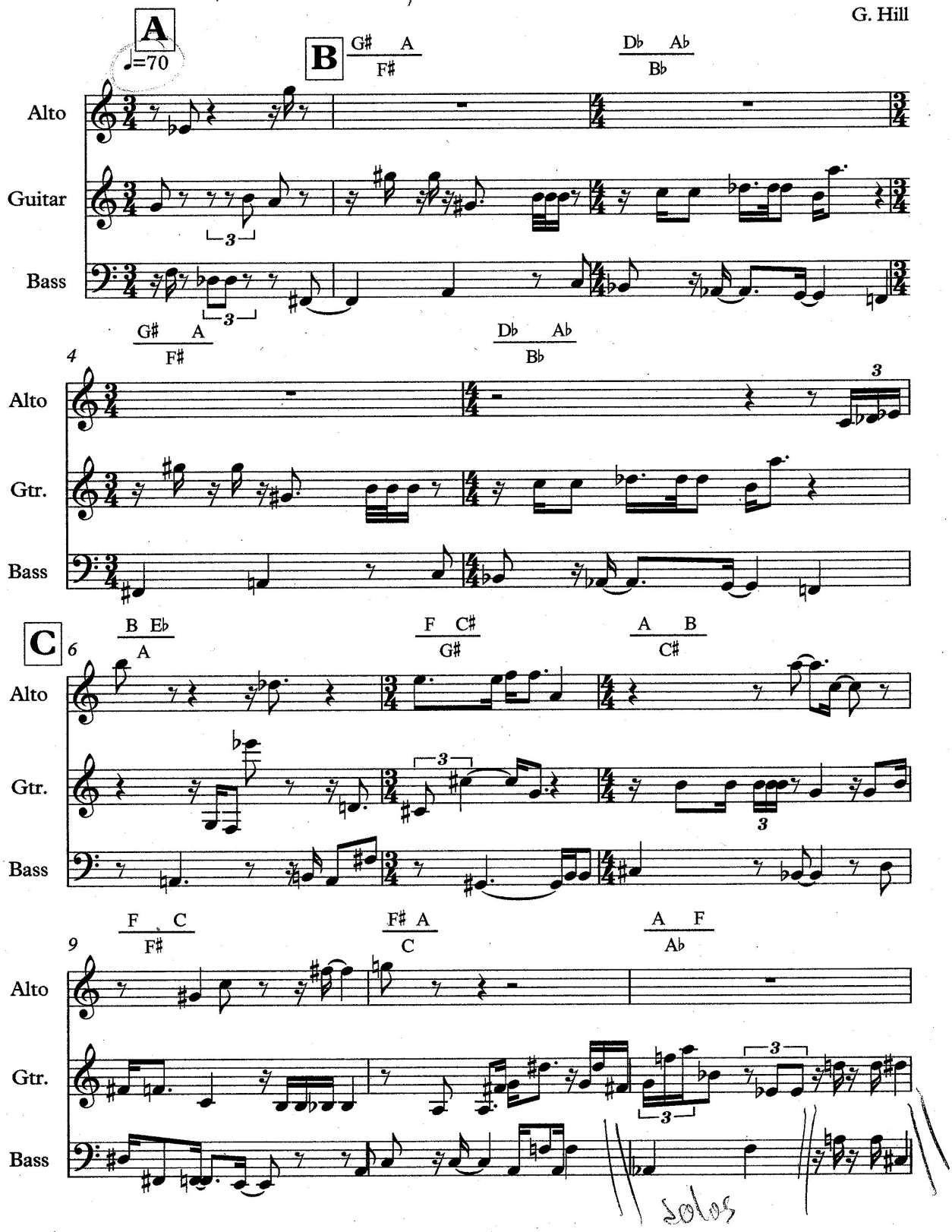
Following the solos, the opening configuration of the written material, the C section followed by the A and B sections, was performed to close the piece.

ABCDE, Solos CD Dm Gaz, CDE

Boreanaz

EAB, solos CD, C D end 15

G. Hill



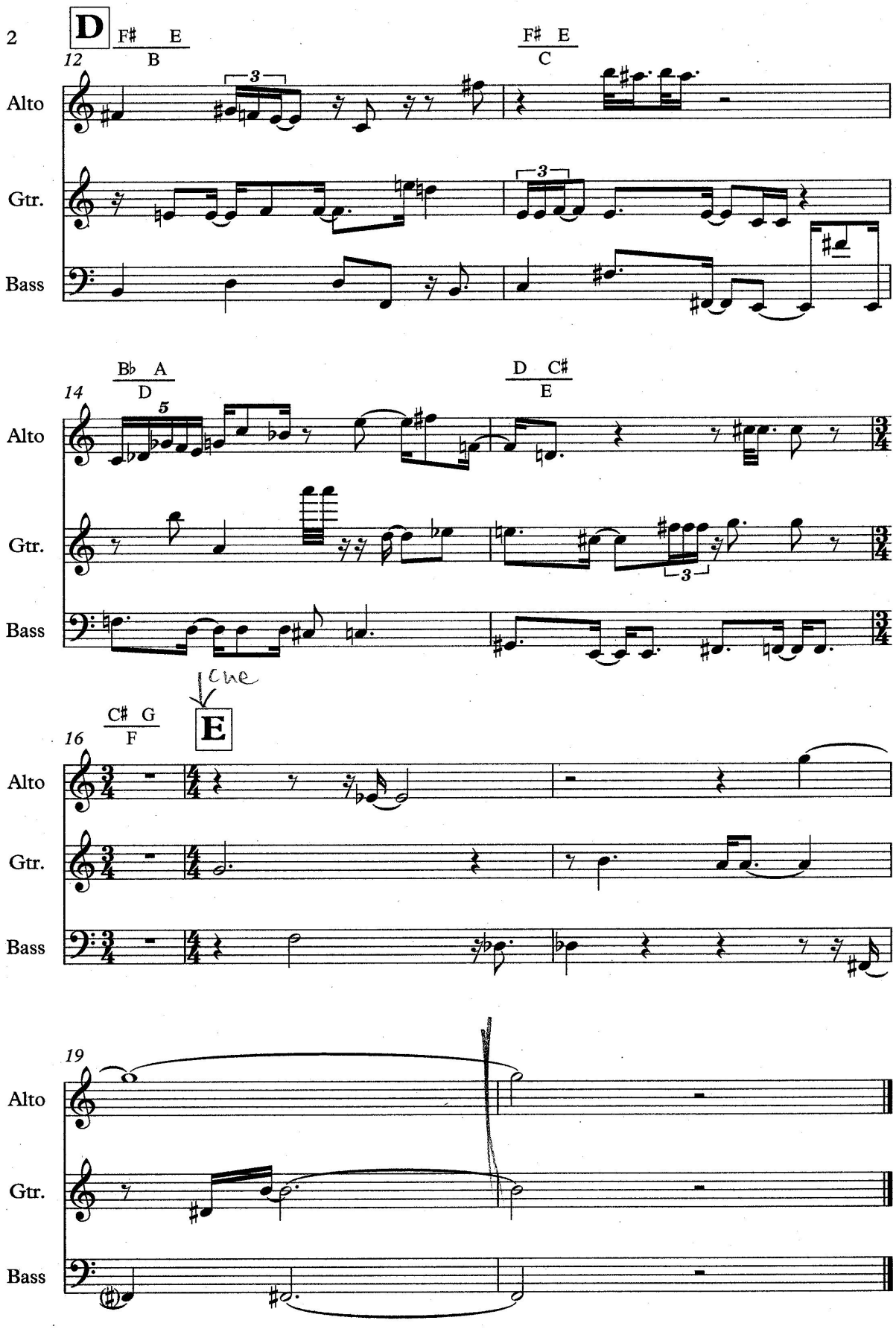


Figure 41 - *Boreanaz*

Boreanaz

The impetus for *Boreanaz* came from the sequence of notes contained in the first bar. This sequence in descending major 2nds, G, F, E-flat, D-flat, B, A and G, is distributed between the alto saxophone, guitar and double bass parts, and displaced by octaves between the instruments. The sequence is broken with the final double bass note of the bar, an F-sharp. While this passage does not use Threadgill's concepts directly, it draws from the restricted intervallic approach seen in *Polymorph*. This passage was extended to produce the final E section of the piece, again drawing loosely from Threadgill's long meter concept. In the E section, the notes that appeared in bar 1 remain in the same order but have been elongated and varied rhythmically.

The remainder of the composition alternates melodic focus between guitar and alto saxophone. The B section features a repeated guitar figure accompanied by double bass counterpoint, before the alto saxophone enters with a motivic melody leading into the C section. Bar 10 and 11 shift melodic focus back to the guitar before the alto saxophone returns to the melody at the D section. The last bar of the D section contains no written material, allowing drums to lead into the elongated sequence in the E section.

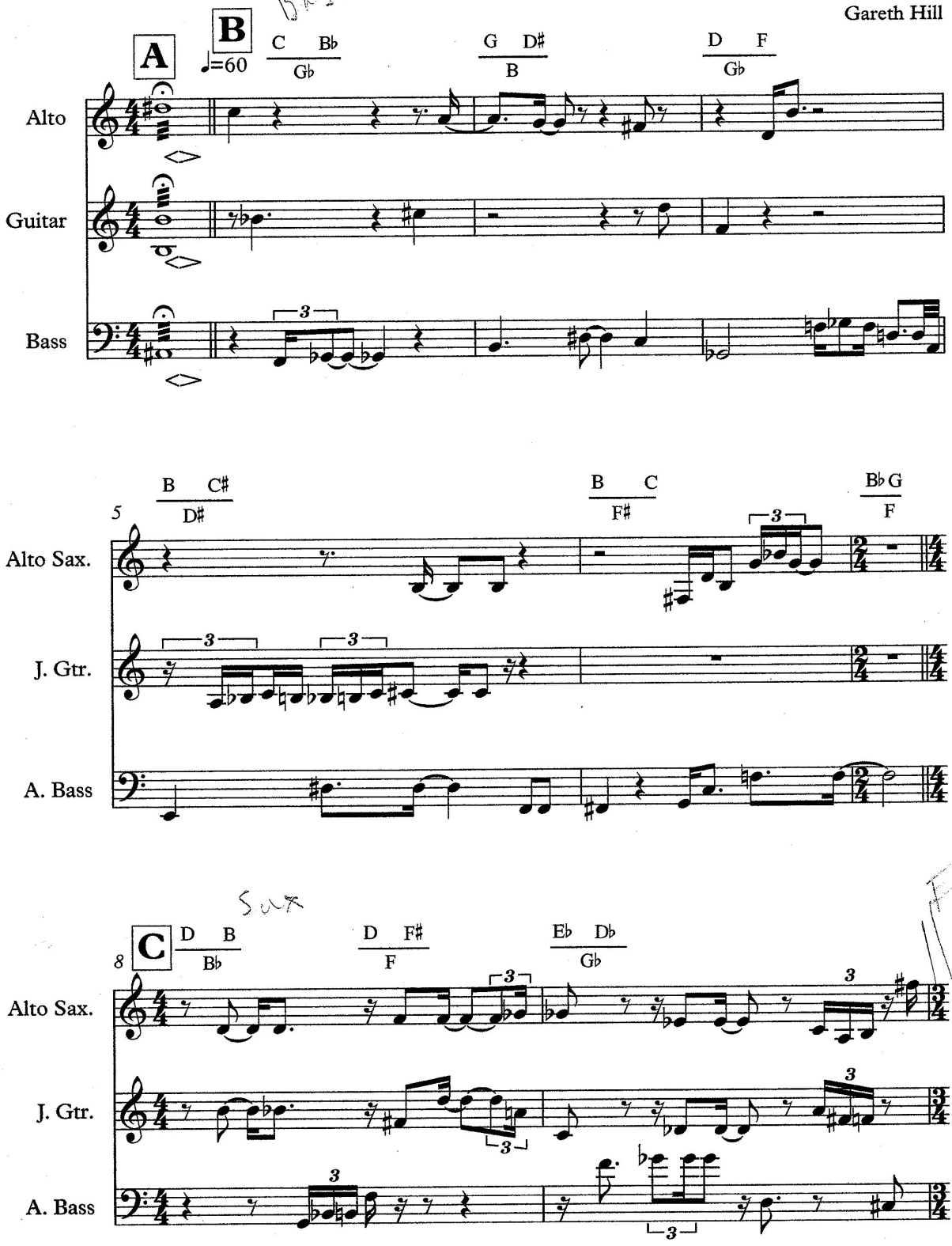
As a later composition in this project, the form of Boreanaz was only modified slightly in the various performance iterations. This was due in large part to the ensemble having less time to become familiar with the material. The modified version can be heard in the Smith's recording that begins with a drum improvisation preceding the ensemble entry of the E section written material until bar 19. The A and

B section written material follows, before guitar and double bass solos are performed on the C and D sections. The written material of the C and D sections then close the performance. A feature of this performance that had also occurred in solos of earlier performances was an inclusion of part of the written material in improvisations, the guitar and double bass figure in the second half of bar 11. This practice provided a regular marker in the repetition of the C and D sections when soloing. The figure both oriented the ensemble to the form and presented a melodic statement that could be used to enhance an improvisation.

A B C D, solos B Bass, C Guit, D Pan, B C ensemble

Termeil

Gareth Hill



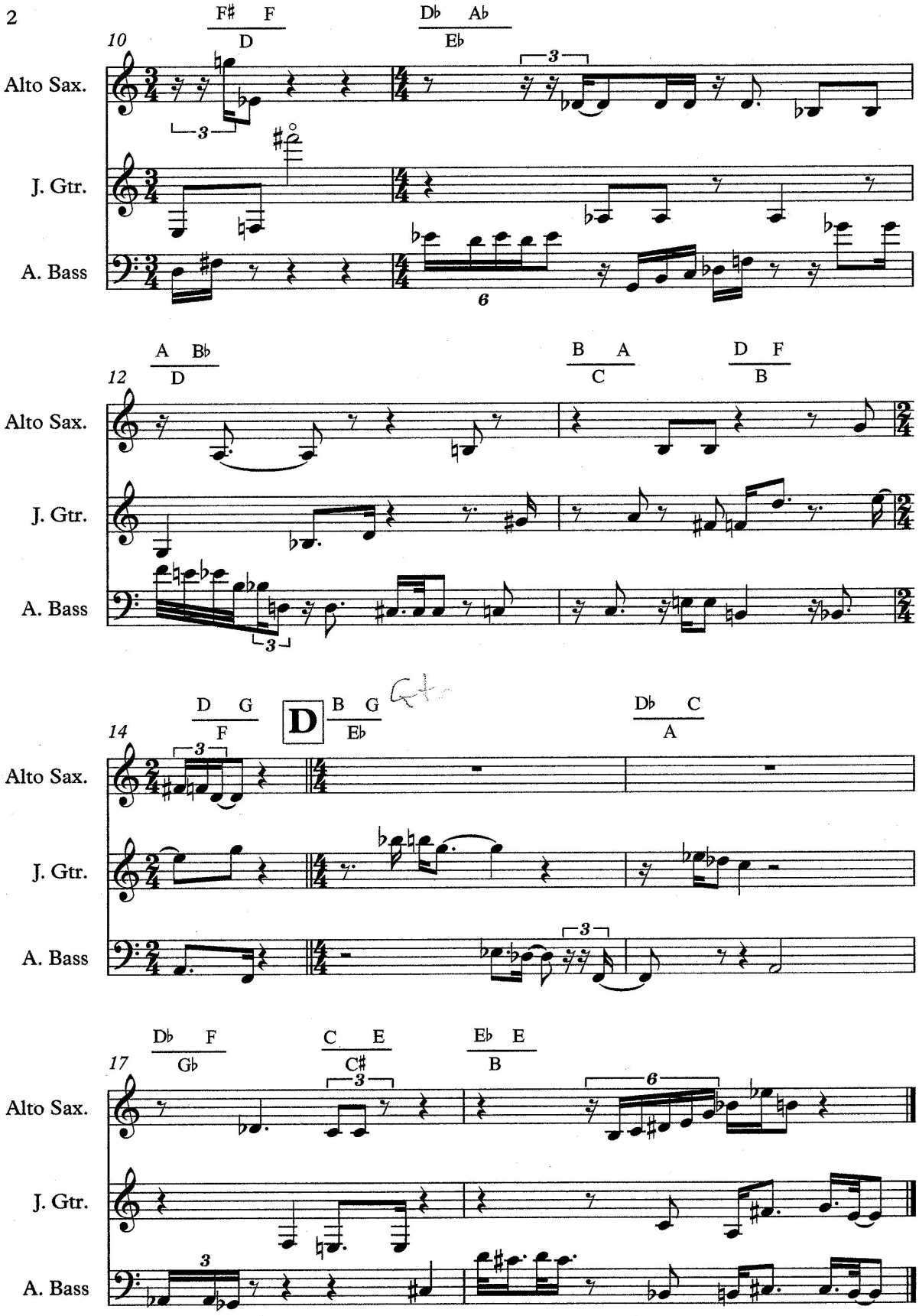


Figure 42 - *Termeil*

Termeil

This composition was inspired by a campground on the New South Wales south coast. The opening tremolo chord is written to mimic the sound of cicadas in this coastal reserve; an all-encompassing crescendo occurs as the insects' sound transitions through the bushland. Following this introduction, a slow and languid melody enters with melodic focus shifting between all three pitched instruments. A sparse alto saxophone melody begins the B section accompanied by guitar and double bass counterpoint. In bar 4 the melodic focus shifts to double bass, then to guitar in bar 5, before the alto saxophone enters at the end of this bar to continue with the melody. The piece continues largely with an alto saxophone melodic focus deviating occasionally to the other instruments. Bar 11 and 12 contain a double bass melody accompanied by alto saxophone and guitar counterpoint, while bar 15 and 16 include melodic motifs interspersed between the guitar and double bass.

As with *2,2,3,4,-6* and *Boreanaz*, this piece did not undergo multiple rearrangements. The arrangement featured on the studio recording served for all performances of this composition. This performance begins with the written material as printed: a sustained crescendo and rapid decrescendo of the tremolo A section before the alto saxophone melody marks the entry of the metered written material in the B, C and D sections. Solos follow, a double bass solo on the B section, alto saxophone on the C section and guitar on the D section. The written material returns starting at the B section and ending abruptly at bar 9, representing the end of a summer holiday.

This change of solo form for each instrument is also present in the transcribed Zooid

pieces, where Threadgill's arrangements draw from very different sections for solos. For instance in *To Undertake My Corners Open*, trombone solos on a modified A section, guitar on a shortened B section, and flute on the C and D sections. In Slow Code performances, this variation provided each soloist a contrasting harmonic area to work within.

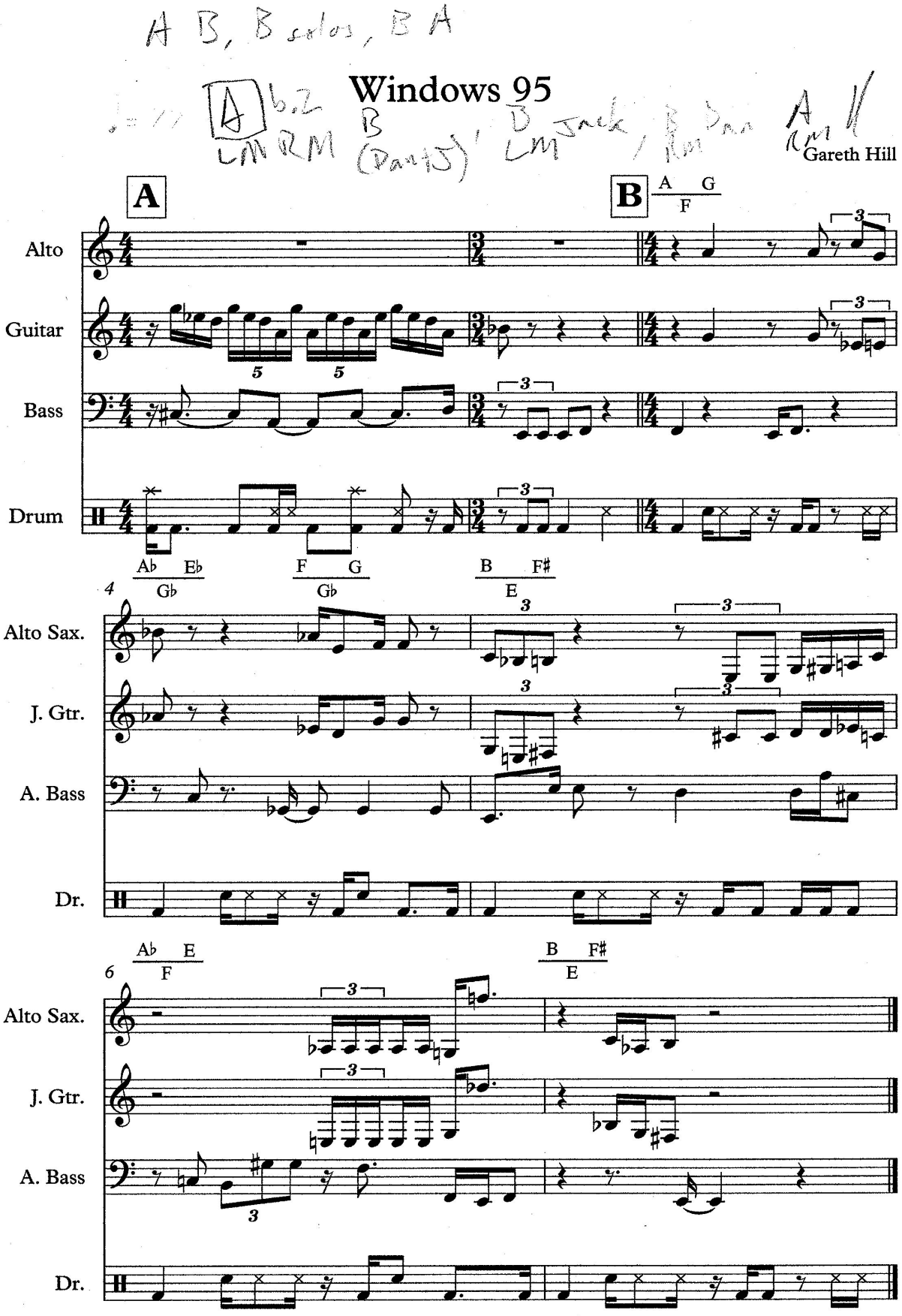


Figure 43 - *Windows 95*

Windows 95

The introduction to *Windows 95* contains the foundational material for the piece. In the first bar, the guitar plays a rapidly moving figure consisting of semiquaver and quintuplet semiquaver groupings of different combinations of four notes: G, E-flat, D and A. Accompanied by counterpoint from double bass and a written drum part, the guitar line finishes on a B-flat in bar 2, leaving double bass and drums to end the section.

The alto saxophone enters in the B section with a melody in rhythmic unison with the guitar, mimicking sections of *To Undertake My Corners Open* in particular. The alto saxophone and guitar parts move independently, often in contrary motion, avoiding any sense of parallel harmony between the two. Meanwhile, the double bass part features a counterpoint line interspersed between the melody. A drum part has been included in the score to indicate a pattern that fits with the guitar and double bass parts in the A section. The continuation of the drum part through the B section is a suggested rhythmic feel from which the drummer is free to depart.

As this was the last composition written for this project, performance and rearrangement opportunities were limited. This meant that *Windows 95* was not significantly rearranged; the Smith's recording shows the extent of this. The piece opens with the written material of A section, with the alto saxophone added playing the guitar part in unison. The written material of the B section is played twice before solos. The alto saxophone performs a solo on the B section in long meter, before guitar and double bass perform solos on the same section, this time in regular meter.

The written material of the B section is then played twice before the A section concludes the performance.

Taken as a whole, these compositions represent a creative response to Threadgill's music discussed in this project. Presented chronologically, increasing comprehension of Threadgill's approach is evident in the pieces and the way they have been performed over the research period. With little information other than Zooid's commercial recordings and published interviews, early attempts including *Mixed Business* and *Tribulation* approximated and adapted a number of Threadgill's concepts. Approaches towards harmonic notation, melody and counterpoint were developed in this period and remained in use relatively unchanged in later compositions. As research progressed, other concepts were experimented with. *2,2,3,4,-6* explored an intervallic approach in melody, harmony and improvisation, while *Termeil* featured multiple configurations of melodic focus and accompaniment within the ensemble. Subsequent compositions also allowed the use of creative devices not identified in Zooid's music including duo improvisation and improvised harmony.

One reflection that occurred to the author at the end of this project was that the harmonic notation adopted from Threadgill's practice filled a desire for less triad-based harmony found in his compositions previously. In prior creative works, the author attempt to modify existing chord notation to describe an unusual harmony and resulting in convoluted chord symbols such as Bsus4(maj7) and D-(maj7)/E. Threadgill's notation allows these harmonies to described more concisely by reducing each to three pitches. In this system, similar harmonies could be written as (B E A#)

and (E F C#). A significant result of this project has been an expansion of the types of harmonic structures available to the author when composing, expanding upon the overly complex chord notation found in his previous works.

The performative approach of the author also experienced significant adjustment. Various aspects of these compositions led to changes in improvising, accompanying and the author's approach to leading the ensemble. As previously mentioned, the use of Threadgill's harmonic notation opened up new and unusual harmonic groupings that prompted the development of an improvisational style less centred around chord/scale relationships, a practice the author had used extensively up to this project. The melodies contained in these compositions tried to build upon the melodic and contrapuntal features observed in Zooid. What resulted was a set of rhythmically complex pieces distinct from that of the author's prior output. In rehearsal, Slow Code spent a significant amount of time learning to play this written material, developing a feel for the way the various parts fit together and an approach to shaping each composition as a whole. For the author, the melodies would act as a framing device, setting the mood and character for subsequent improvised passages. In particular, the contrapuntal nature of these compositions inspired a similar approach when improvising. When accompanying or soloing, the author looked for opportunities to play around and between the other members in the ensemble to recreate a similar contrapuntal feel.

The author's practice as a bandleader also developed. Along with the logistical and interpersonal skills every bandleader must develop, the process involved in presenting and developing new concepts in untried compositions with this ensemble were

challenging. A contributing factor was the slowly developing understanding of Threadgill's concepts over the course of this project. Composing started in the early stages of research, without the aid of many significant discoveries to come. This level of understanding led to experimentation becoming a key practice in rehearsal. Through the process of rehearsing, certain concepts were adjusted or abandoned and replaced to allow our performances to function. As previously mentioned, one early practice in *Mixed Business* involved improvising without the aid of any chord notation, relying instead on the written material provided in the score. It quickly became clear that the written material on the score was too complex to comprehend quickly enough for effective improvisation in this ensemble. Prompting from other ensemble members led to the author's decision to add Threadgill's notation system to the piece. This provided a clearer harmonic structure for improvisations and a base from which to further develop performances of this and the other compositions.

Challenges also arose in the application of other practices. Form modification was used in all the compositions presented here and posed difficulties for the group in maintaining group cohesion in performance. As mentioned previously, Threadgill's ensemble members mentioned that they no longer write down new arrangements for Zooid compositions. This practice did not work well for Slow Code. While not beyond any member, the experience needed for this kind of memorisation has not been developed as yet. As a group, it was decided that new arrangements must be written down at this stage. Different suggestions were voiced, including removable post-it notes, but the author decided it was simpler for each player to inscribe the arrangement on their sheet music.

In *2,2,3,4,-6*, an interval set was introduced as concept for improvising. As mentioned previously, the soloist was directed to improvise using only the intervals contained in the interval set. In rehearsal, ensemble members expressed that they felt too confined by this intervallic restriction. The solution to this problem came from the author's interview with Ellman where he explained that the soloist in a Zooid performance can be less strict with using the interval set. This approach allowed soloists in Slow Code space to deviate from the interval set, using the intervallic material as a suggestion rather than a rule.

Indeed, many of the creative solutions developed by the ensemble for the compositions presented here arose during rehearsals. The process of developing new arrangements for compositions began as preconceived ideas brought to rehearsal. Often these preconceived arrangements would undergo additional changes; as the group would initially attempt to perform an arrangement, other more enticing arrangement options would become apparent to the author or ensemble musicians. These new ideas, uncovered in the process of rehearsal, would sometimes be musically unappealing but more often than not would become part of the next performance of the composition. This practice of trial and error created a dynamic atmosphere in rehearsals where creative suggestions from all participants were welcome and encouraged. This exploratory approach is in part inspired by the descriptions of Threadgill's leadership in rehearsal from Ellman and Hoffman.[11]

Initial research aims included furthering the author's creative practice through the creation and performance of new works that explore rather than replicate Threadgill's

[11] See pg. 64 for further discussion of Threadgill's rehearsal practice.

work with Zooid. Additionally, it was stated that the success of this project lay in the artistic merit of the creative output. It is suggested that this project has satisfied both of these statements. Continuous composition and performance throughout the research period has allowed a new creative practice approach to emerge with Slow Code through an exploratory process of applying Threadgill's concepts. Importantly, the author has been artistically challenged by the project and the open and creative atmosphere that was created by the ensemble.

Conclusion

The impetus for this project came from the author's difficulties in comprehending the music of Henry Threadgill's Zooid while at the same time experiencing a fascination and attraction to its unique sound. As a practicing musician, this project's initial aims were to investigate Henry Threadgill's music for Zooid from a creative perspective, determining idiosyncratic concepts and techniques and furthering the author's creative practice through application of these concepts and techniques in the creation and performance of new compositions. A secondary aim emerged in production of the literature review where it became apparent that there is little research concerning Threadgill, a prolific and award-winning musician.

The primary aims of this project were achieved through a number of processes. Initial information regarding Threadgill's approach for Zooid came from numerous published articles and interviews, as well as fieldwork interviews conducted with members of his ensembles including Brandon Ross, Liberty Ellman, Christopher Hoffman and Jose Davila. These sources, as well as a limited amount of related research literature, enabled the completion and analysis of transcriptions of three Zooid pieces: *After Some Time*, *Polymorph* and *To Undertake My Corners Open*. An understanding of the idiosyncratic concepts and techniques that have been developed for Henry Threadgill's Zooid emerged through this process.

Threadgill's concepts and techniques for Zooid identified in this project enabled new approaches to composition and improvisation. It was also determined that these

practices contribute greatly to the mysterious and ambiguous nature of this music. With source material supplied by Ellman and Hoffman the harmonic and structural elements could be determined in the transcribed scores. Threadgill's practice of form modification produces elaborate rearrangements of his compositions, greatly obscuring the original material used by the ensemble. Metrically complex, time signatures in Zooid compositions frequently change from bar to bar (this is compounded by directions for the drums to perform in an alternate sequence of time signatures). Harmony in Zooid is not derived from triadic structures, instead note groupings stemming from the intersecting written material form the harmonic progressions. The movement of individual parts in the written material is directed by interval sets, a collection of intervallic material itself derived from an inversion process. Rhythmically, instrumental parts are frequently displaced creating a dense counterpoint within the music and further obscuring the atonal harmonic progression. In solo sections the improvisations performed by the ensemble preserve features of the written material. In particular, an improvised counterpoint practice has developed within the ensemble. Together these practices make comprehending the mechanics of this music without reference to Threadgill's scores extremely difficult. Fortunately for this project some of this material was sourced.

The creative component of this project extended throughout the study. The creation and performance of new compositions throughout the research period allowed exploration of, and experimentation with, the findings. Additionally, Slow Code adapted many of these practices to allow for effective performance in the ensemble. This enabled a related yet individual musical approach to develop in Slow Code.

The research has produced a clearer understanding of the musical practice of Zooid and identified idiomatic concepts and techniques that are applicable to the author's creative practice. Application of these practices has occurred in the composition and performance of new pieces. For the author, this creative output has been both creatively stimulating and satisfying. In support of the author's view, audience members were also positive with their feedback. Canberra Jazz stated,

> [Slow Code] was highly rich in harmony and dissonance, fleet of foot with change and improvisation, highly interactive with guides but also glances … It was a stunningly inventive and difficult but satisfying exploration of rhythm and harmony and interplay. (Pozza 2017)

Additionally, the project has identified a number of areas for further research. A deeper study of Zooid, in particular aspects that were beyond the scope of this study such as the role of the drums and the rhythmic approach of the ensemble, could uncover further innovative features and provide a more complete picture of Threadgill's approach to counterpoint. In particular, there may be a rhythmic system of organisation within this music coexisting with the harmonic system mentioned previously and generating the complex counterpoint between the Zooid instruments.

Also worthy of further exploration are the concepts used in the creative component of this project. There are more opportunities to creatively investigate Threadgill's approach to harmony, counterpoint and, in particular, form modification. As an approach, form modification opens a significant amount of possibilities for the performance of individual compositions and the techniques used in rearrangement. One concept worthy of further application is Threadgill's intervallic system. Aspects

of this system were used in *2,2,3,4,-6* but not thoroughly explored elsewhere. Additional investigation of how this system can be used in composition and improvisation could reveal new creative practices.

Similarly, the development of ensemble practice of Slow Code was deemed to be beyond the scope of this project. As a result, the reflections contained in Chapter 4 are restricted to observations about the author's compositional performative approach. Further study of the performance development of the creative works, including reflections of the other members of the ensemble and the use of transcribed excerpts from the performance recordings could reveal additional aspects of Slow Code's practice and other directions for creative development.

Threadgill's earlier output remains largely neglected in the literature. His work as a composer spans over 40 years. The music of his earlier ensembles, previously mentioned, is wide-ranging and experimental. Each of these ensembles are worthy of individual investigation as they all present contrasting phases of Threadgill's music making. An entire survey could reveal fascinating aspects of the evolution of this forward thinking musician.

The research presented here is one view of Threadgill's extraordinary ensemble. It is hoped that this inspires a greater appreciation of the unique creative output of this innovative composer and performer.

Appendix 1 – Transcriptions

The following sections contain the transcriptions of *After Some Time, Polymorph* and *To Undertake My Corners Open* produced for this study. There are two separate scores included for each piece. The first is a written material score that was used in Chapter 3 for analysis of Threadgill's compositional style. These scores have been derived from written material determined in the transcriptions and, as previously stated, are an approximate representation of the pre-composed scores used in Zooid. The second is a full transcription of selected recordings taken from the Zooid albums *This Brings Us To Vol. 1* and *This Brings Us To Vol. 2*.

All scores have been annotated with Threadgill's harmonic information. The harmony and interval set information have been included above each system, while the duration for each harmony has been indicated with dashed lines dividing each bar. In Threadgill's original scores, harmony duration is written as a numeral under each harmony. Dashed lines were used in this context to make harmony durations clearly evident in the scores.

Other annotations appear in the full transcription scores. Written material and solo sections have been indicated in boxed text. Some bars in long meter were too long to fit comfortably on one system and were split across two, indicated with [split bar]. Occasionally, sections of transcriptions did not match to the forms indicated in the guitar and cello parts. This may be due to irregularities occurring within the ensemble in performance, or could just as likely be caused by errors in the transcription process. To account for this some bars have been shortened and marked as [irregular bar].

Scores have been removed for copyright or proprietary reasons.

After Some Time, (written material score, and, full transcription)
Polymorph, (written material score, and, full transcription), and,
To Undertake My Corners Open, (written material score, and, full transcription)

All by Henry Treadgill (trans. G. Hill)

Appendix 2 – List of Recordings

The following recordings are included as part of the creative component of this project. They comprise live performances and a studio session featuring the compositions discussed in Chapter 4. All compositions are by the author unless noted.

Live Performance 1: Uptown Jazz Cafe, 5 February 2015 (audio-mp3)

1. What's Your Name		7:46
2. Mixed Business		4:49
3. Secret Love	Paul Francis Webster/Sammy Fain	9:24
4. Closed Set		7:06
5. Stella By Starlight	Victor Young	10:42
6. Tribulation		5:17
7. Free Tickets		6:02

Live Performance 2: University of Tasmania Conservatorium of Music, 18 March 2016 (video-mp4)

1. How Did You Get This Number		5:26
2. Mixed Business		4:25
3. Sermon	Dan Mamrot	6:47
4. Tribulation		4:52
5. Who Wore It Better		5:53
6. Sabre	Jack Beeche	6:14
7. 2,2,3,4,-6		5:42
8. Boreanaz		4:59

Live Performance 3: 303, 13 July 2016 (audio-mp3)

1. Windows 95	4:52
2. Boreanaz	5:25
3. Who Wore It Better	5:11
4. How Did You Get This Number	5:42
5. Mixed Business	5:14
6. Termeil	8:25

Live Performance 4: Smith's Alternative, 6 April 2017 (audio-mp3)

Set 1

1. Who Wore It Better		8:27
2. Boreanaz		7:06
3. Sermon	Dan Mamrot	8:19
4. Tribulation		7:30
5. Ugly Beauty	Thelonious Monk	6:21
6. 2,2,3,4,-6		5:53

Set 2

1. Windows 95	7:04
2. Mixed Business	6:13
3. How Did You Get This Number	5:08
4. Scooping (Jack Beeche) -- Termeil	16:43

Studio Album: Pughouse Studios, 17-18 July 2016 (audio-mp3)

1. Tribulation	3:32
2. Boreanaz	5:31
3. Who Wore It Better	7:23
4. 2,2,3,4,-6	6:18
5. Untitled	2:01
6. Windows 95	4:44
7. Mixed Business	4:06
8. How Did You Get This Number	4:21
9. Termeil	4:59

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